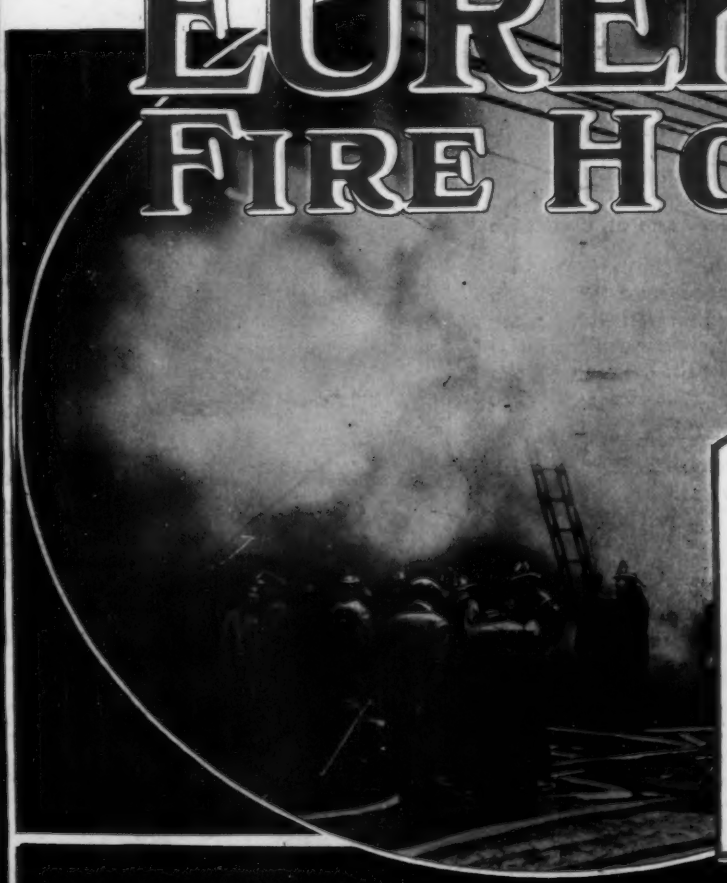
OHIO STATE UNIVERSITY
AUG 11 1926
LIBRARY

FIRE ENGINEERING

A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

AUGUST 10, 1926

EUREKA FIRE HOSE



EUREKA—

from coast to coast!

We're mighty proud of the fact that fire departments from coast to coast—in the big cities and in the small towns—have standardized on fire hose bearing the Eureka brand.

An investigation of the hose records in these departments proves that Eureka Fire Hose has earned its fame as "the standard of fire hose quality and service."

Standardize on Eureka! It stays on the job 'til the job is done!

Eureka Fire Hose Manufacturing Company

The Hardest FIRE I Ever Fought

No. 17 *of a series of experiences of our noted Fire Chiefs*

JOHN GIBSON
Fire Chief
Mt. Vernon, N. Y.

We have had numerous difficult fires to handle, but I think the old theatre building fire of Feb. 28th, 1922, was the hardest of them all. Particularly, because it involved the heart of the business section and on account of the conditions by which we were handicapped.

Three alarms brought out one 75 ft. aerial truck, two American-La France 750 gallon pumpers, one Ahrens-Fox 800 gallon pumper and three hose cars on one of the coldest days of the winter.

The theatre building, which was of frame construction rapidly became fully involved and threatened adjoining frame and brick buildings which were not equipped with fire shutters, so that our men had quite a task on hand to keep the fire from extending through the business section.

By the hard work of our men we were able, after an 8-hour fight, to confine the fire to the theatre itself with a property loss of about $50,000 but without loss of life or serious injuries.

It is significant that the theatre had been closed by order of the mayor just about three weeks previous on the recommendation of the department, as we considered the building a serious fire hazard and unsafe for public gatherings.

JOHN GIBSON
Chief, Mt. Vernon Fire Dept.

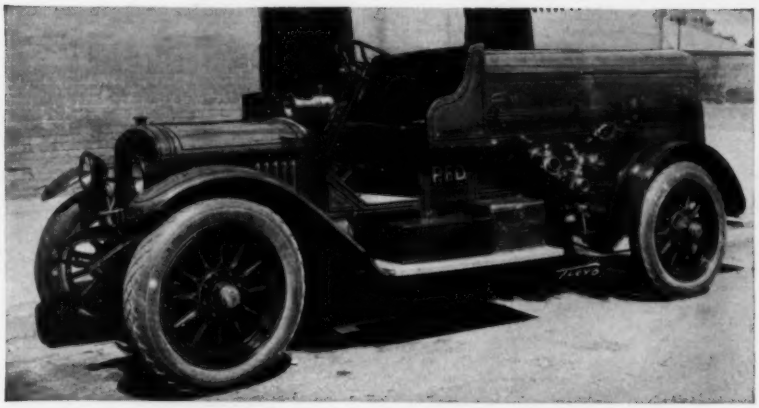
Goodrich Hose was used in bringing this fire under control. For fifty-six years its unvarying superior quality has played a leading part in developing national fire fighting efficiency.

THE B. F. GOODRICH RUBBER COMPANY
ESTABLISHED 1870 *Akron, Ohio*

Goodrich
FIRE HOSE

"Best in the Long Run"

A truck which serves the public must be exceptionally sturdy and reliable. That GMC Trucks answer these requirements is proved by the many municipalities and public service corporations using them.



These GMC features mean

Low Running Expense

and greater truck profits

Gas; oil; tires;—these items of expense can make or break your truck profits. The GMC you buy today is the direct result of 24 years of successful truck building. And this long experience, plus General Motors unusual engineering and manufacturing facilities, has developed features which *reduce the running expense of GMCs to a point which is attractive to the operator.*

Engine

Each cylinder wall is a separate removable sleeve—accurately machined to even thickness. Expansion and contraction are therefore equal in all parts insuring a *continuous close-running fit of the pistons* and preventing loss of power.

Light weight pistons and connecting rods reduce fuel and oil consumption.

Unusually accurate valve action saves fuel.

GMC system of oil straining saves oil.

The plain tube carburetor, with its simple and easy adjustment insures real fuel economy.

GMC 2-Range Transmission

[Giving 9 different gear ratios]

Effects great fuel savings by allowing all work to be done with the engine operating at its highest efficiency. Also it saves tires because heavy loads can be started without jerking. An exclusive GMC feature on all models of 2½ tons and larger.

Rear Axle

Provided with radius rods to relieve springs of driving thrust. Springs absorb starting and driving torque, resulting in greater pulling ability and more tire mileage.

GMC TRUCKS
PRODUCT OF GENERAL MOTORS

Sold and Serviced Everywhere by Branches, Distributors and Dealers of

GENERAL MOTORS TRUCK COMPANY, Pontiac, Michigan

A DIVISION OF YELLOW TRUCK AND COACH MANUFACTURING COMPANY

GMC 1, 1½ and 2½ ton trucks — GMC Big Brute 3½ and 5 ton trucks — GMC Big Brute 4 to 15 ton Tractor Trucks

Co GMT Co—1926 — Yellow Cabs — Yellow Coaches — Yellow Light Delivery Trucks — Hertz Drivurself Cars

The Journal of the Fire Protection Profession Since 1877

MEMBER
Audit Bureau of Circulations
Assoc. Business Papers, Inc.

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

Published the 10th and 25th of each month

SUBSCRIPTION PRICE
U. S. $3 a year; Canada $3.50
Foreign $4; Single copies, 25c.

Issued at Lyon Block, Albany, N. Y.,
by CASE-SHEPPERD-MANN PUBLISHING CORP.
Also publishers of "Water Works Engineering," Technical Books, etc.

Executive and Editorial Offices,
225 West 34th Street, New York City
All communications, including Editorial, Advertising and Subscription, can be directed to either of the above addresses.

KARL M. MANN
President and Advertising Director

FRED SHEPPERD
Managing Editor

I. HERBERT CASE
Vice-Pres. and General Manager

H. S. ESSEX, Advertising Manager; ROBT. H. LOCKWOOD, Editor; NATHAN N. WOLPERT, Asst. Editor.

EDITORIAL ADVISORY BOARD

JOHN KENLON
Chief, New York Fire Dept., Founder of New York Fire College

JOHN C. MORAN
Chief, Fire Department, Hartford, Conn.

GEO. J. KUSS
Former Deputy Chief N. Y. F. D.; Lecturer on Fire Fighting, Delehanty Institute, N. Y.

A. A. BELL
Chief of Fire Brigades and Engineer "America Fore" Group of Fire Insurance Cos.

What Care We?

YES, sir; Friday will be the thirteenth and there may still be, in this more-or-less enlightened age, a few superstitious birds who will be on the lookout for what they call "bad luck" that day.

¶ We firmly believe, however, that ninety-nine times out of a hundred *our luck is what we make it!*

¶ Progress is achieved by pushing forward courageously along the right lines.

¶ All of which suggests, so far as FIRE ENGINEERING is concerned, the importance of keeping in touch with all the latest developments of the fire field—new methods, new equipment, etc.

¶ *Write to us* for information you want, We are glad to give it.

¶ *Write to the advertisers* for any information about their products. That's what they want, and they are advertising in these pages primarily to give you opportunity to know their products better. A two-cent stamp, rightly used, will bring big returns!

The Publishers

CONTENTS

AUGUST 10, 1926

VOL. LXXIX No. 15

Four-Alarm Blaze Follows Explosion in Chemicals (Illustrated) 767
Large Fire in Down-Town Drug Section of New York Develops Into Dangerous Fire.

Hazards in Responding to an Alarm (Illustrated) . . 769
Some of the Problems in Reducing the Danger of Companies Answering Fire Alarms—Officers Held Responsible.

Modern Fire Alarm Signalling (Illustrated) 771
Seventh of a Series of Articles on the Problems of Installation, Repair and Upkeep of a Fire Alarm System.

The University of Illinois Course of Instruction in Fire Protection (Illustrated) 773
Mechanical Installations, (continued) by Raymond T. Nelson.

Wetting Down Must Be Thorough (Illustrated) 774
Method of Fighting Fire in Sash Factory Described in Previous Issue.

Questions and Answers 775
Replies to Questions on all Manner of Subjects of Fire Fighting and Fire Protection.

With the Editor 777
Comments on Current Events and Live Topics by our Editorial Staff.

Recent Important Fires Specially Reported (Illustrated) 779
Celluloid Causes Fatal Toy Factory Fire in Rockford, Ill.; Orphanage Building Saved in Cleveland, O.—Burnings of the Week.

Industrial Plant Protection (Illustrated) 781
Practical Suggestions to Plant Fire Chiefs.

Recent Patents (Illustrated) 783
Description of Patented Inventions of Interest to Fire Department Officials.

Volunteer Fire Department (Illustrated) 784
Matters of Interest to Volunteer Firemen.

Fire Department Activities 787
Newsy Notes from All Over the Country on Matters Firemanic.

Fire Department Improvements 796
Record of Business Activities in the Fire Protection Field.

Fire Alarm Notes 787
News of the Activities of Fire Alarm Division of the Fire Department.

False Alarms 799
The Humorous Side of the Fire Protection Profession

Contents of this issue copyrighted, 1926, by Case-Shepperd-Mann Publishing Corp., 225 W. 34th St., New York City

Entered as second class matter at the Post Office, Albany, N. Y. January 29, 1926 under the Act of March 3, 1879.

Ahrens-Fox Ladder Trucks

Embody the Latest Improvements in Modern Fire Apparatus Construction

BEFORE you decide on new city service or Aerial Ladder Truck equipment for your department, you should in fairness to yourself and to your city get all the facts about Ahrens-Fox apparatus.

Just consider a few of the features of the above pictured Double Bank City Service Truck protecting life and property at Braintree, Mass. Powered with a specially designed and constructed Ahrens-Fox fire apparatus motor. Heat treated pressed steel frame. Double reduction shaft drive (rear axle). Top ladder level with driver's seat. Side step extended in the rear.

For a combination of efficiency, compactness, convenience and completeness—plus guaranteed serviceability—we believe it impossible to beat this typically superior Ahrens-Fox job.

It was Ahrens-Fox apparatus that years ago made famous the slogan: "Nothing is too good for fire service, and nothing but the best will do." Nothing but the best is good enough for your department, and if you haven't on file all the latest Ahrens-Fox literature, we suggest that you drop us a line at once.

"Nothing is too good for fire service,
and nothing but the best will do."—Ahrens-Fox

The Ahrens-Fox Fire Engine Co.

"Builders of Quality Fire Apparatus"

Cincinnati

Eastern Representative
J. A. PRESCOTT
Fisk Bldg., New York

New England Representatives
CARLOW AUTO CO.,
Taunton, Mass.

Chicago Representative
HENRY R. EARLY
Planters Hotel, Chicago, Ill.

California Representatives, PACIFIC FIRE EXTINGUISHER CO., San Francisco, Cal.
Western Central Representative, J. G. MATHENY, 3418 Central St., Kansas City, Mo.
Minneapolis Representatives, JOS. F. AUEL Company, 718 Builders' Exchange Bldg., Minneapolis, Minn.
Canadian Representatives, THE BICKLE FIRE ENGINE CO., Woodstock, Ontario

Pictures speak quicker than words!

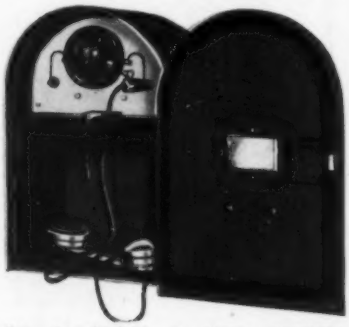
EVERY department of an important GARL installation is shown here except the battery room.

From the portable telephone at the fire alarm box to the automatic register on the operator's desk at headquarters, no detail has been overlooked that will simplify, speed-up and clarify good accurate signalling.

While simplicity is the key-note behind all GARL patents—the non-corrosive mercury contacts in every box, giving an electrical connection at all times the equivalent of a soldered joint, is largely responsible for the greater dependability of GARL systems.

With lower first cost, insignificant maintenance expense and sure, efficient operation, it is no wonder that the GARL proposition is meeting the delayed requirements of many cities.

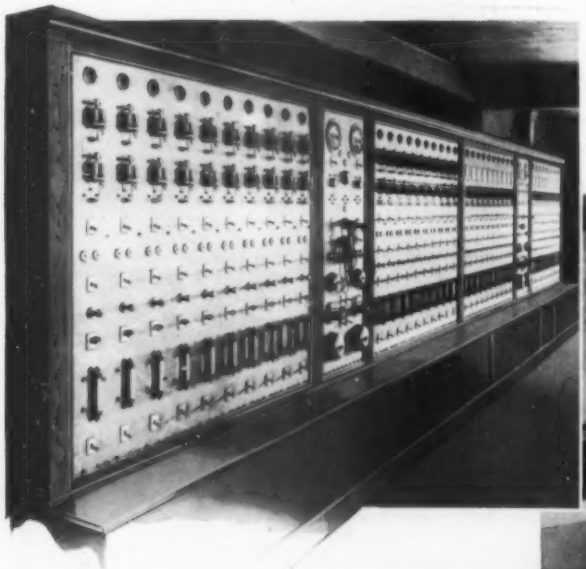
GARL SIGNAL boxes are of attractive design and distinctly storm proof.



Note the simplicity of internal construction. Nothing to get out of order or to confuse the layman. Even the telephone insures the simplest method of communicating with headquarters.

Send us your request for quotations

THE GARL SIGNAL COMPANY
AKRON, OHIO



This signal board is serving a city of more than 200,000 people. With the telephone switch board shown at right and GARL signal boxes, it has a record of eight years without a bad call.

A RELIABLE FIRE ALARM SYSTEM MEANS LOWER FIRE LOSSES

"Wawona" one of the most famous of California's Big Trees—in the Upper Group of the Mariposa Grove.

Old-Established — *Growing*

Emblem of BUSINESS CHARACTER

Rice Leaders of the World Association

Represents High Standing in NAME - PRODUCT - POLICY

THE purchaser—of any product—is seldom interested in the character of the organization that produces it. He is concerned solely with the quality of his purchase and its value to his business. Yet the old-established, *growing* concerns are his chief source of supply, for the natural reason that they owe their growth to the quality and value of their wares.

The Darling Valve & Manufacturing Company has been in the valve and hydrant business for 25 years, each year growing and expanding to take care of the ever-increasing demand of both old and new customers.

Darling Fire Hydrants are built to give the very best service possible under present-day conditions. They were especially designed to meet the six essential requirements: i. e., greatest possible volume of water; to withstand hard usage; non-freezing; valve closing with pressure, preventing escape of water should barrel be broken; adaptability to installation changes, and inside parts removable through top.

Catalogs and diagrams sent on request.

DARLING VALVE & MANUFACTURING CO.
Williamsport, Pa.

New York
Chicago
Houston
Oklahoma City

DARLING

FIRE HYDRANTS AND VALVES

A Fire Chief Wrote This *Northern Pump Ad*!

"More Gallons per Horse Power"

JULY 8th, 1926

I should have written long ago and told you what we think of our pumper (built by you) out here. The first test we had for it was a good one. At 12:30 A. M. on Jan. 22, this year, we were called out to a big garage fire. The place was a mass of flames when discovered, but the wonderful streams of water the pumper delivered pushed the fire back to a small shop in the rear, where we were able to keep it.

We pumped water on it for three and one-half hours. All this happened in *twenty-one degrees below zero weather.* The pumper never faltered an instant.

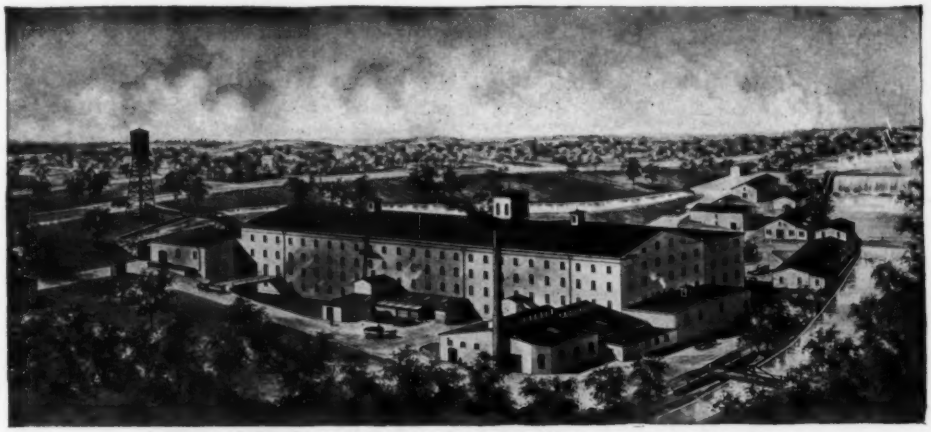
Local people now consider our *Northern* one of the best investments the city has ever made—an idea I have had from the day it was delivered. We have had considerable use for it this spring and it has never failed us.

H. C. BACON,
Chief F. D.,
Dawson, Minn.

NORTHERN FIRE APPARATUS CO.

902 18th Avenue, N. E.
Minneapolis, Minn.

ROTARY NORTHERN PUMPS

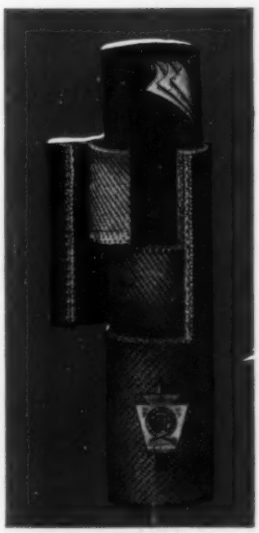


Where Fabric Fire Hose is made—Plant at Sandy Hook, Conn.

Why Buy Fabric Hose?

(Every Fire Official Should Read This)

BECAUSE we are so proud of the secrets used in its manufacture that we tell you all about them. **Because** our illustrated booklet "Wax and Para Gum Treated Fire Hose — How It is Made" explains many unique and really important points of advantage. **Because** it is a hose made to stand up under conditions that would make ordinary hose unserviceable in a fraction the time. **Because** it has a Loose inner tube, with its many advantages. **Because** it is absolutely impervious to moisture and will not mildew or rot. **Because,** in short, Fabric Fire Hose is light, pliable, compact, has great strength, is free from friction, kinking or twisting, and, **Because** it is the cheapest in the long run.



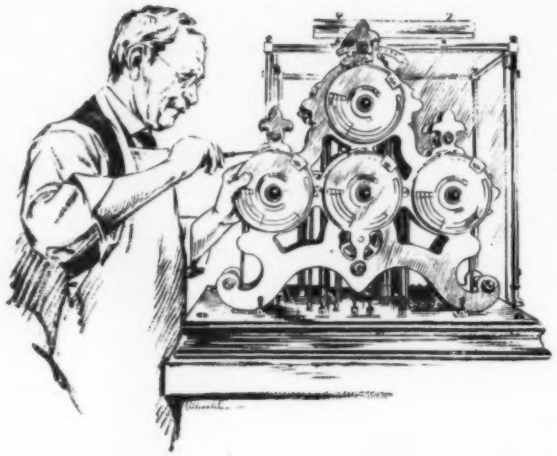
Fabric Fire Hose Co.

127 Duane St., New York, N. Y.

124-126 W. Lake Street, Chicago

Atlanta
Boston
Columbus
Dallas
Binghamton
Baltimore
Minneapolis
Portland
San Francisco
Los Angeles
Newark
Pittsburgh

A little journey through the GAMEWELL FACTORY



Custom Built

Once the signal has been passed along by the fire alarm box to the central office it is extremely important that it be recorded and retransmitted to the engine houses. This work which requires the utmost accuracy and reliability, falls to the part of the recording and transmitting apparatus.

The functioning of this apparatus is almost human. Incoming signals are selected from individual box circuits, recorded and sent out immediately over all the engine house circuits.

Great care is used in designing and constructing so that the apparatus will not only operate accurately but also stand up day and night, year in and year out.

The finest materials are used in recording sets, repeaters and transmitters. Contact points for instance, are made of silver, insulated circuit-breaker blocks of onyx, mounting bases of fine Italian marble, dust proof cases of polished plate glass, while metal parts are lacquered to prevent discoloration or corrosion.

Owing to its nature, this apparatus does not lend itself to quantity production. Most of our transmitters and repeaters are custom built to meet the needs of each installation. Other recording and transmitting apparatus receives the same careful attention from expert workmen.

All this enters into the manufacture of recording and transmitting apparatus that will give the municipality or industrial unfailing fire alarm protection.

$500.00 Contest Still Open

Although numerous entries have already been received, items sent in now may win $250 or $500 for your Firemen's Relief Fund. A bulletin will be sent upon request.

The Gamewell Company

Newton Upper Falls, Mass.

"A Box A Block"

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Leading Journal of the Fire Protection Profession

VOLUME LXXIX AUGUST 10, 1926 NUMBER 15

Four Alarm Blaze Follows Explosion in Chemicals

New York City Has Big Fire in Its Drug and Chemical District—Building Once Housed Engine 32

By WM. JEROME DALY

THE old drug and chemical district of New York had as spectacular a fire as has been witnessed in many years on Monday, July 26, when an explosion rocked the six story brick building of Pierre Lemoine, Inc., at No. 108 John street. The blast occurred at about 12.50 p. m., apparently on the fourth floor, where an employee, John Marquardt was at luncheon. He told Deputy Chief Fire Marshal John P. Prial that he saw flames in the rear of that floor and that when he attempted to extinguish the fire, the explosion occurred, burning him badly. He fled from the building. A Postal Telegraph messenger boy across the street rang in the alarm at John and Pearl streets.

Deputy Chief William Clark, hero of the famous and fatal Windsor Hotel fire on St. Patrick's Day, 1897, responded with the first detachment. By the time the apparatus reached the scene, No. 108 was ablaze on the 3d, 4th, 5th and 6th floors. The contents were principally essential oils, chemicals and perfumes. Next door at No. 106 was the five story brick building of McMann & Taylor, dealers in pipe fittings and castings. The explosion caused the fire to spread to these premises.

When Engine 29 arrived with the first alarm companies a pipeman volunteered to go into the building and test the destructive effects of the heavy vapors seep-

New York Fire Fighters Attacking Big Chemical Blaze in Drug Section of City from the Top and the Bottom

ing from every opening. He came out with the report that they could be penetrated and then collapsed. Dr. Harry M. Archer, New York's non-salaried and honorary fire department medical officer attended him and he was able to return to his quarters.

Four Alarms Sounded

Chief Clark sounded a second alarm. Chief Kenlon upon his arrival ordered a third and later a fourth alarm. A total of twenty engines, five trucks, one rescue company, one tower, one deputy chief, four battalion chiefs and one department ambulance responded.

Eleven engines and five trucks changed location. The water tower responded but was not used. The fire was fought from the outside, with wagon pipes and hand lines from adjoining structures, as well as lines up fire escapes of both the buildings afire as well as buildings in the rear.

Building Once Site of Engine Co. 32

The building where the fire started was once the site of Engine Co. 32, when it was but a three story build-

Ventilating Through the Roof at the Drug Fire in New York City

ing. It is only two blocks away from Fulton Fish Market and it was about thirty-five years ago, when the late lamented Deputy Chief John Binns was Captain of old 32; the company's star buff and sandwich and coffee carrier was none other than Alfred E. Smith, later Governor of New York and pride of "The Sidewalks of New York."

Fatal Accident to Young Woman

One of the incidents of the fire was the mishap to a young woman, employee of the London & Lancashire Insurance Company. A half a block away, on John street, the new fifteen story fireproof Underwriters Building was in course of construction. A brick fell from about the twelfth floor, striking the girl on the head.

A male spectator who saw the brick descending shouted a warning to her. After she was struck, he picked her up and dragged her out of the crowd. Dr. Harry M. Archer rushed to her aid, but when he saw her skull was fractured, he sent her to Beekman Street Hospital. She died two hours later.

Cause of Fire Undetermined

There were no employees in the building afire other than Mr. Marquardt. It was at the luncheon hour, which was fortunate. The cause of the fire, at this early writing, is as yet undetermined. Mr. Marquardt at the Beekman Street Hospital told Deputy Chief Marshal Prial his version of the blaze. The flames were extinguished in about an hour. Due to the rare quality of the merchandise in the building where the explosion occurred, it is difficult at this time to estimate the damage, but it was roughly fixed at about $75,000.

A Martyr to Duty

Listed among the casualties of the explosion and fire at the Federal government's arsenal at Dover, N. J. a month ago was the name of Private first class, Ralph B. Graham. As names go in casualties, this didn't mean so much, but behind his death is this interesting background.

Last Spring, Uncle Sam decided that the fire protection of the Brooklyn Navy Yard would have to be taken in charge by the U. S. Marine Corps. Accordingly, the Commandant of the Navy Yard sent to Chief Kenlon for instruction in fire fighting, a few of the Marines, among whom was Graham.

Graham was assigned to Engine Co. 14 on East 18th street. Each evening upon returning to those quarters from the Drill School and the Fire College, he would mess with the firemen in quarters and pay his prorated share of the expenses. Graham, after a while, asked his superior officer at the Navy Yard for rations or maintenance, which would relieve him from paying for his meals from his own pocket.

This suggestion of his was frowned on and he was told to return to the Navy Yard, morning and night, for his meals. Graham complained that the journey to and from the Navy Yard, in New York's already overcrowded subway, was tiresome and annoying and he protested to such an extent, that his assignment to the N. Y. F. D. College and Drill School was revoked for "lack of maintenance funds." He was thereupon shifted from the Navy Yard to the Arsenal at Dover, N. J. The next heard from him, was his obituary. Good soldier that he was, he died in the line of duty, a victim of fire and explosion.

DALY.

N. Y. F. D. Baseball Team to Play Detroit

The baseball team of the New York Fire Department, as shown in the accompanying photograph, will journey to Detroit, Mich., on August 12, to play against the ball team of the Detroit Fire Department, but there is something more to it than a baseball contest. It has a humanitarian side.

The games will be held at the Detroit's American League baseball park on Saturday, August 14th, and Sunday, August 15, for the benefit of the Detroit Fire Department's Mutual Aid Fund.

Thus far the Detroiters have failed to vanquish the New Yorkers, although they have met for the past two years, once in Detroit and before that in New York. The latter occasion was a memorable one, in that Mayor Smith of Detroit waited

New York Fire Department Baseball Team 1926

Front row (left to right): Marshall, p; Gilfillan, p; Finley, 2b; O'Connor, p; Maurer, 2b and Capt. of Team; Kinsley, 3b; McGovern, 1b; Walker, c; Beatty, cf; Haugh, p. Standing, (left to right): Damm, c; Dempsey, c; Bernardin, lf; Welsing, ss; Gilbride, manager; Seger, rf; Gillies, p; Berkeley, cf; McNeish, lf.

over to see the final game and then had to fly by aeroplane back to Detroit to keep an official engagement next day.

Fire Commissioner Dorman, Chief Kenlon, Honorary Deputy Chief W. W. Cohen, Dr. Archer, Capt. William J. Lennon and other New Yorkers will accompany the N. Y. F. D. team to Detroit next Thursday (Aug 12) to root for the home team.

DALY.

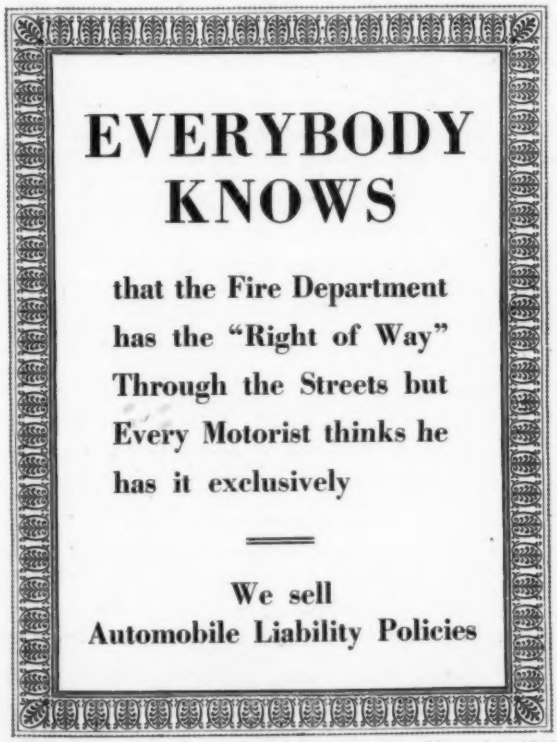
Hazards in Responding to an Alarm

Regulating Auto Traffic—Curbing Reckless and Careless Motorist—Officers Held Responsible for Excessive Apparatus Speed

STRANGE as it may seem to the layman, records indicate that by far the greatest hazard to the firemen is during the interval that the firemen leaves the fire stations and arrives at the scene of the fire. Chief Kenlon of New York city once made the statement that there are more New York city firemen killed while on the way to a fire than there are killed in the actual line of duty. With this statement as a starting point, there should be sufficient interest aroused to give consideration to the problem as to how to reduce the dangers which the fire companies incur while responding to a fire.

Various Phases of the Problem

The problem may be resolved into certain well defined subdivisions. There is the hazard of a vehicle coming out of a side street directly in the path of the approaching apparatus,


EVERYBODY KNOWS
that the Fire Department has the "Right of Way" Through the Streets but Every Motorist thinks he has it exclusively
We sell Automobile Liability Policies

This Insurance Company Advertisement Hits the Nail on the Head Insofar as the Attitude of the Motorist is Concerned.

there is the possibility of two fire companies colliding while responding to a common destination but from different points, there is the chance that a motorist will become confused and not turn to the right curb until the fire apparatus passes, and there is the great problem of motorist racing to the scene of the fire. The latter condition is more prevalent in the smaller municipalities and especially in the towns which rely on the fire siren or bell for a signal for the volunteer firemen.

Regardless of how piercing a siren or how loud a bell is placed on the fire apparatus, there will always be a motorist who when hailed to court for cutting in on the approaching fire company, will give as his defense that he did not hear the warning of the fire apparatus. It is hardly possible to pass judgment as to whether such statements are false or not, due to the many personal factors to be considered, but it does seem that there is a fallacy some where when so many offer the same excuse as a loophole.

Danger where No Policeman is Stationed at Corner

Where there is no policeman stationed at a crossing, the possibility of collision at a corner is increased. In the closely built up sections of a city, it is impossible to obtain a view of the intersecting street until one is at a point beyond the sidewalk of that highway. It becomes a matter of civic pride and appreciation of the work of the fire department on the part of the public, for some of the civic organizations to start a campaign to instruct the passerby that on his observance of an approach of a fire apparatus, he should run to the nearest corner, that is if there is no traffic policeman stationed there, and warn traffic coming up through the intersecting streets. This plan may at first seem at though it would be necessary to have implicit and unlimited faith in the goodness of one's fellow-citizen. It is a scheme whose success depends on the manner in which the numerous municipal agencies disseminate the plan. If the public is approached in the proper manner, an idea of this character may be made to work. It is generally conceded that "it is far easier to teach ten others what good is to be done, than be one of the ten to follow your own instructions." However before passing critical judgment, it will be well to at least try it out in some small locality.

Warning Sirens and Red Lights

Some cities have an arrangement that as soon as the fire companies leave the house on its way to a fire, several warning sirens which have been erected at some of the busiest street corners, commence to shriek their call to halt. For the principal mercantile sections, this is excellent; to cover the lesser mercantile and built up residential sections requires a much larger appropriation than some city officials believe the city can afford.

A new thought for the safety of the firemen at night has been introduced by the perfecting of a red headlight lens. Where this plan is being used, it will be well to limit the use of red headlights to certain type of vehicles and not allow taxi cabs and private cars to use red lights on the front of the car for what they believe to be trade distinguishing marks or added attractiveness to the car.

Collisions by Two Fire Companies

Strange as it may seem, there have been a number of cases on record where two fire companies rushing to a fire from

Lieutenant Killed in Fire Truck Crash
FIRE TRUCK WRECKSAUTO; 1 DIES, 6 HURT
Five Firemen Injured When Trolley Strikes Engine Leaving Station
Two Firemen Hurt As Cars Collide
Lieutenant in Driver's Seat Is Killed; Injuries May Prove Fatal to One of Autoists
Engine Strikes 'L' Post After Collision and Overturns; Automobile Reduced to Junk
FIRE TRUCK IN SMASHUP WITH MAXWELL AUTO
FIRE TRUCK, STREET CAR AND AUTOMOBILE DAMAGED IN SPECTACULAR COLLISION
Trolley Knocked Across Street By Crash

Newspaper Clippings That Show How Serious the Problem Is

two different points, have collided and the firemen killed or severely injured. When horses, were universally used in fire department work, the speed of the fire apparatus was dependent on the endurance of the horses—this was about ten miles an hour. In case of danger of collision, the animals showed their "horse-sense" and the instinct of self preservation by trying to avoid accidents. Now when the drivers become drunk with a sense of the ability with which the motorized fire apparatus responds to the touch of the throttle, and the knowledge that they have virtually a clear path, speed has become the cry. Speed, speed, and more speed. They forget that they were satisfied in the old days with the rate at which the horses traveled. The curse of the speed craze has often been the

underlying cause of apparatus coming together. The solution may lie in the reduction of the speed or by the establishment of well defined fire routes so that when the driver of one apparatus approaches a certain point, he knows that there is a possibility of another company moving in from that direction.

Officers Held Responsible for Excessive Speed

One city recently passed a ruling that in case of accidents resulting from the excessive speed of the apparatus, the officer in charge of the company is held responsible. They argued on the theory, and it is with a good foundation of facts, that the driver will only operate the fire apparatus at a speed commensurable with the desires of the officer seated by his side. If one will only take paper and pencil and sit down and figure the small reduction in the running time of a company by increasing the speed of the motor to an appreciable amount, one will surely stop and consider whether the results warrant the risk.

Curing the Offending Motorist

The cure of the motorist who will wait until the last moment before turning to the right hand curb so that the apparatus will have a clear road, lies with the judicial department of the city. After the public sees the manner in which violators of the city ordinance are treated, the inducement of such a thrill will be materially reduced. The judges should not be adverse to "going the limit" and making an example of some of the offenders. The thrill-seeking or thoughtless motorist, by his seemingly trivial act, is introducing a hazard of prime importance.

Evil of Cars Racing the Fire Apparatus

The problem of cars racing the fire apparatus to the scene of the fire is one that is encountered in towns where the people depend on the siren or whistle for the forwarding of an alarm of fire. It is the one means of notifying all the volunteer firemen simultaneously. Many of the smaller places in addition to having a siren, have some code by which the public will know the direction in which the fire is located. The bad feature of this plan, is that each one that has a car immediately takes it out of the garage and rushes for the fire. In the small town, a fire is one means of breaking up the monotony of the regular routine of things. In an inconceivable short time, all the roads are filled with racing motorists, and the fire apparatus being the heaviest and most awkward to handle, has to wend its way to the fire as best it can and once it reaches the scene, there is a large number of parked cars or a great crowd of people to block the work of the firemen. It is exceedingly difficult to suggest a universal cure for this problem. Each village and town presents a problem that is distinctly individual. In one town where they had a large number of call men, they did away with the use of the siren and had the operator call the men by phone. There are many adverse points to be considered in this arrangement such as the length of time to call all the men and the necessity of some one being at home to answer the telephone. Yet in that particular town, it may have been a solution to the problem.

To cure the motorist from hogging the road and not pulling aside for the fire apparatus, it will be well to have a member of the police department or constabulary ride on the fire apparatus and jot down the license numbers of the offenders. One summons to court should be the cure for most of such offenders.

Ordinances Needed to Curb Motorists

It would be well to have an ordinance passed which will require no car to park closer than a specified distance from the scene of a fire, and not to park their cars so that the lanes and highways leading to the fire will block the ingress, egress and regress of the fire department. It is somewhat amusing to mention the scheme adopted by one town to cure this brand of pest. While all the motorists were watching breathlessly the firemen fighting the fire, a member of the police department made a tour of all the parked cars, noted the license number of the cars that were parked so as to inconvenience the firemen and tied a summons to the steering wheel. When the crowd wended its way home, many had their ardor dampened by the sight of the summons to appear in court.

This problem of interference with the response of fire alarms is one that should merit the attention of all fire chiefs. It can well be treated from a selfish viewpoint—it should be considered, because of the danger to one's life and limb, and the possibility of injury. Where the civic pride of the citizens or their sense of responsibility cannot be appealed to, the sense of their importance to cooperate should be jammed into them by means of the judicial department of the municipality.

California Firemen to Meet at Long Beach

The fourth annual convention of the California State Firemen's Association is to be held at Long Beach, Cal., on August 19 to 21. The program is as follows:

Wednesday, August 18

7:00 p. m. Registration. Engine Co. No. 1. 3rd St. & Pac. Ave.

Thursday, August 19

9:00 a. m.—Until Noon, Registration at Auditorium Annex. 12:00 a. m.—Buffet Lunch, Picnic Deck under Municipal Auditorium.
1:00 p. m.—Opening Addresses: Assistant City Manager G. L. Buck. City Engineer, L. B. F. D., W. S. Minter. Response: President Calif. State Firemen's Assn., Jas. Radford. Memorial Address: Rev. Geo. M. Rourke. Reading of Financial Reports and President's Report. Appointment of Committees. Submitting Papers for Discussion.
2:00 p. m.—Auto Ride through City for Ladies. 2:30 p. m.—Baseball game, Los Angeles-Pasadena Fire Departments. 7:30 p. m.—Reports and Discussion of Legislative matters. 8:00 p. m.—Plunge party at Bath House for Ladies.

Friday, August 20

9:00 a. m.—Reports of Committees. Discussion of Papers Submitted.
10:00 a. m.—Boat Ride through Harbor for Ladies. (Box lunch furnished by courtesy of Harbor Division L. A. Fire Dept.)
2:30 p. m.—Baseball game between losing team Thursday and Fresno. 8:00 p. m.—Dance Cinderella Ballroom.

Saturday, August 21

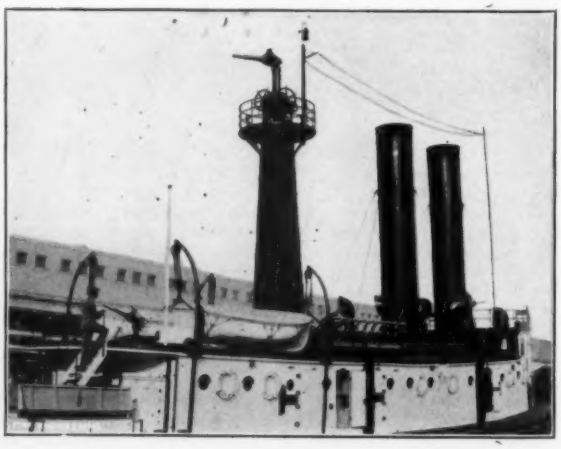
9:00 a. m.—Unfinished business. Selection of City for next Convention. Election of officers. Installation of officers.
1:00 p. m.—Demonstration by exhibitors. 2:30 p. m.—Baseball game between Thursday's and Friday's winners. 5:00 p. m.—Barbecue at Recreation Park. 8:00 p. m.—A Night on the "Pike."

Sunday, August 22

10:00 a. m.—Fire Boat Demonstration at San Pedro. (Courtesy R. J. Scott, Chief Engineer, L. A. Fire Dept.)

The following papers are to be read at the convention, besides general discussion on any topic brought up by members from the floor:

"The Value of a Fire College to Fire Departments," by 1st Asst. Chief Samuel H. Dodd, Los Angeles Department.
"Care of Motor Fire Apparatus," by R. H. McNeish, Los Angeles Department.
"The Necessity of a State Fire Prevention Act," by County Fire Warden S. D. Turner, Los Angeles County.
"Extinguishing Oil Fires," by Captain G. G. Griswold, Santa Fe Springs Department.
"First Aid Work in Fire Departments," by Chief W. S. Minter, Long Beach.
"The Firemen's Gas Mask and Its Use," by Edward Streidle, Carnegie Institute of Technology, Pittsburgh, Pennsylvania. Paper on "Volunteer Fire Departments."



Radio Installed in San Francisco Fire Boat

A radio set has been installed in the San Francisco fire boat "David Scannel." It is a one-tube set with a head piece conveniently arranged for the pilot who can listen in while reclining in his berth. The antenna is arranged on the double spar and mast attached to the fire tower.

CHARLES W. GEIGER.

Modern Fire Alarm Signalling

Automatic Combination Storage Battery Switchboards—Installation, Operation and Care

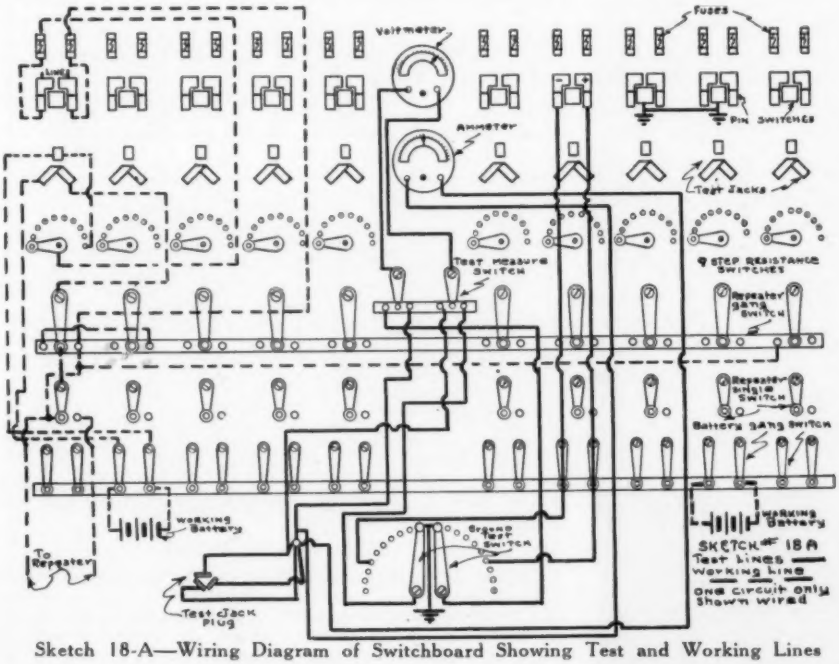
By E. W. KEIRSTEAD, E. E.

THIS is the seventh of a series of articles on the care, installation and repair of various phases of fire alarm work. The author has had practical experience in this field, and he will answer questions on this subject that are submitted to him by the readers, free of charge. The only condition is that a stamped envelope must be enclosed for reply.

Description, Installation, Operation, and Care

As described in the last article issued on standard switchboards, the batteries must be charged every other day; there must be some means of regulating the charging rate and period. One type of switchboard was described in the last issue, the other types are described here.

Automatic and Automatic Combination Switchboards are made for any number of circuits up to ten and twelve circuits and are usually equipped with repeater control and ground testing switches. It is also possible to have certain kinds of features included such as automatic low battery voltage tell tale indicator, and remote control transfer switches, etc.



Sketch 18-A—Wiring Diagram of Switchboard Showing Test and Working Lines

The automatic and automatic combination switchboard are described in full in this article. Several illustrations and diagrams are presented to enable the new or industrious man to follow the work.

In Figure No. 16 you will see a 10-circuit automatic combination switchboard; reference is also made to Figure No. 17. Refer to the views as often as possible to be sure you are following the description properly.

Apparatus on Automatic Combination Switchboard

No. 1. In the center of the board and at the very top is located a single throw double pole knife switch of the 600 volt type. It is used for connecting and disconnecting the current from the board.

No. 2. On the right and left hand side of the switch you will find a screw-in type fuse to protect the board from abnormal and heavy currents.

No. 3. At the top of the board, the first two lamps on each side are the staring lamps. These are of 100 watts and pick up the load until it is transferred by the automatic control unit.

No. 4. On either side of the starting lamps the charging resistance lamps are located, and they are used as a variable resistance to balance the charging units of 100 watts.

No. 5. Directly below the main switch and in the center of the board, are the rate switches by means of which the charging current can be varied. They have four different ranges.

No. 1—.4 to .8 amps.
No. 2—.8 to .2 amps.
No. 3—2. to 5. amps.
No. 4—5. to 7.5 amps.

No. 6. Directly under the rate switches is the automatic control device. It is composed of the following apparatus.

Pick up Relay. Polar Relay.
Positive and negative battery terminals.
Supply buss bars. Supplementary contacts.
Pivoted armature.
Overload tripper magnets.
Overload magnets.
Resistance units.

A little will be given about this device so as to enable one to understand it farther on.

The busses on the armature in the off or open position rest on two hinged contacts leading to the starting lamps. These lamps are located on the top of the board and in the center. As soon as the main switch is closed the current passes through the polor coils and through the starting lamps. When the current passes through these coils the armature will be attracted and the circuit through the starting lamps will be broken. The current will now be flowing through the resistance lamps and into the battery if the proper amount of current is passed. If too little current is passed the armature will fall back and flop up and down; when this has happened a few times it will kick out the main switch and disconnect the load. If too much current passes, the knife switch will be released immediately. If the current is reversed the polar magnet will repell and the switch will be opened. This device will automatically disconnect the supply for any one of the following faults:

Underload, overload, reverse current, fluctuating line voltage, abnormal condition.

No. 7. On either side of the board near the auto control device the voltmeter and ammeter are located. This makes it possible to measure the current being passed.

No. 8. Below the ammeter, which is on the left hand side of the board voltage switch, is the board which can be adapted for 110, 220 of 550 volts by arranging the switch properly.

No. 9. Directly opposite the voltage switch is the test measure switch. It is necessary to place the switch in the desired position so as to test the battery voltage and to obtain the ground reading.

No. 10. The pairs of switches which are in line with the rate switches, are the series parallel switches by means of which it is possible to arrange the batteries in different groups for charging. Setting of the switches is as follows: On right hand contacts, batteries are in parallel; on left hand contacts, batteries are in series.

It can be readily seen that the batteries can be grouped in any number of different ways.

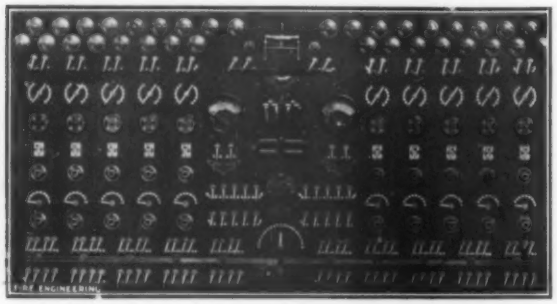
No. 11. Directly below the series parallel switches are the 7 step resistance switches. The following table is given to show the settings.

No. 1. Short circuit no lamps cut in.
No. 2. Three lamps in parallel.

No. 3. Two lamps in parallel.
No. 4. One lamp only in the circuit.
No. 5. Two lamps in parallel and one in series.
No. 6. Two lamps in series.
No. 7. Three lamps in series.

With the board in series you can see that changing any 7-step switch will affect all the sets of battery.

No. 12. Below the seven step switches are placed the line fuses to protect the working line from abnormal currents.



—Courtesy of Gamewell Company

Fig. 16—Ten Circuit Standard Automatic Combination Storage Battery and Repeater Switchboard.

No. 13. Below the fuses are the pin switches which can be used to open the line; ground either side of the line for testing purposes etc.

No. 14. The jacks below the pin switches are the working test jacks used to obtain the test reading of charging battery. It gives the voltage and amperage.

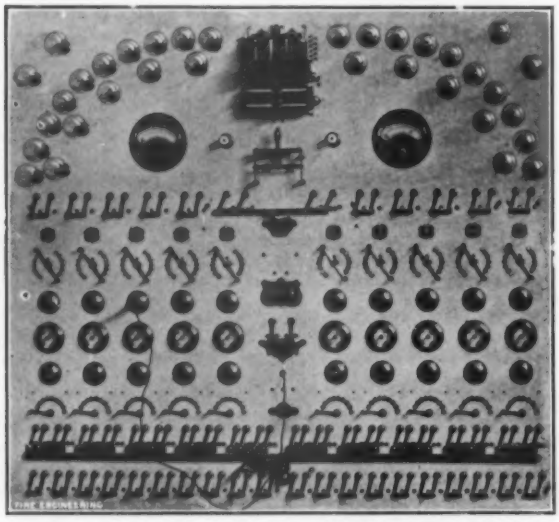
No. 15. The rheostat switches below are the line rheostats. It is possible to vary the working line by inducing or cutting out resistance, keeping the line at 100 mill. amps. at all times. They have nine steps each of twenty ohms thus giving a range of 180 ohms.

No. 16. The row of jacks below the rheostats are for measuring the current on the working or signal line.

No. 17. The gang switch below the nameplate is the repeater gang switch by means of which it is possible to place the repeater in a series of parallel positions or to place the board in series not using the repeater at all.

No. 18. The single point switches below the repeater gang switches are the repeater single switches which cut out any circuit magnet in the repeater.

No. 19. Just below the single switches is the ground test switch which makes it possible to test both the right and left sides of the line for grounds.



—Courtesy of Gamewell Company

Fig. 17—Ten Circuit Automatic Storage Battery Switchboard.

No. 20. The gang switch running across the board is the battery shifting switch. This is to shift a battery from the charging to the working position without opening the line. It has an indicator marked A and B.

No. 21. The double arm switch below is to cut out any single battery allowing a man to work on it without doing any damage to the circuit.

No. 22. The jack plug on the end of the cord is plugged into the jack of the circuit being tested for voltage and amperage.

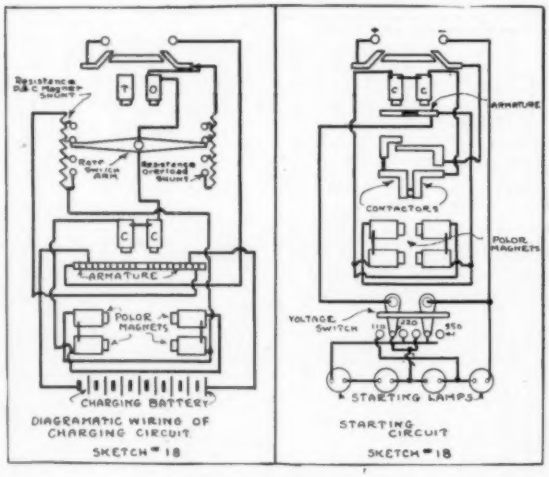
In Fig. No. 17 a central office type of automatic switchboard is illustrated—it is the same as shown in Fig. No. 16 except that the pin switches and protective devices are placed on a separate board and there are no repeater switches. It is recommended that 110 or 220 volts be used for charging and 550 should only be used in cases where it is absolutely necessary.

Wiring on the Back of Automatic Switchboards

In sketch No. 18 is shown the wiring of a ten circuit switchboard; there are two sketches No. 18 and No. 18A the former being the starting and charging circuit, and the latter the working or signal circuit. It is shown merely for descriptive purposes and should not be used to correct the troubles occurring in your own offices. A print of your switchboard can be obtained upon request from the makers.

The charging circuit will be shown but not traced out because of lack of space. However, any one who would like to go over this can do so by getting in touch with author.

A word of caution at this time is necessary and should be taken. If at any time your automatic control unit becomes out of order, *do not attempt to correct the trouble yourself.* Have



a man from the company who made your board, adjust or fix it, because the least little tension or movement on your part will result in failure.

Working Circuit Wiring

Coming in positive on the pin switch, the current passes through the fuse and continues on down to the right hand contact on the repeater gang switch to the left hand contact on the single switch and through the repeater. It returns through the right hand contact and over to the right hand contact on the test jack going to the positive post of the battery. It returns negative and passes through the top of the test jack into the 180 ohm line rheostat to the negative side of the fuse, thence to the negative side of the pin switch on out to the line. This completes the working circuit.

The test and ground circuits are shown in a solid light line and can be easily followed out. Chiefs of fire alarm departments should have a complete set of prints of their offices in a place that is easily located.

Installation of Switchboards

The room selected to house the switchboards should be light, airy, and dry and should be kept at an even temperature all the time. It should be of ample size to hold the boards and should be strong enough to stand the added weight placed upon it. There should be ample space behind the boards to allow access to the backs of the boards in case of trouble.

The proper way to install the switchboards was given in the last issue and the instructions can be applied to these boards as well. Be sure to run all cables and wires in a rigid or flexible iron conduit or other approved method. Be sure the board sets square and that it is not tightened up too tight as the slate will be apt to crack under the strain. If the board is equipped with marble or slate kickplates be sure that they are shimmed up with cardboard and are not tightened up too tight.

(*Continued on page* 795)

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

MECHANICAL INSTALLATIONS

By RAYMOND T. NELSON,
Engineer, Western Actuarial Bureau, Chicago

THIS sixteenth installment of the University of Illinois Course in Fire Prevention continues the consideration of a type of common and very important hazards which the chief has to combat in his fire prevention work:

INSTALLATION OF MOTION PICTURE MACHINES (Fig. 20)

All motion picture machines using inflammable films should be enclosed in a booth meeting the following minimum requirements:

Size: Booth should be not less than 6 x 8 feet in size and 7 feet high.

Walls: Walls should be constructed of one of the following or equivalent materials:

Masonry not less than 8 inches thick, 4 inches if reinforced concrete; gypsum blocks plastered on both sides; metal lath and cement plaster, not less than 2 inches thick, supported by incombustible members; or

A metal framing of 1½ x 1½ x ¼ inch angle and tee irons, securely braced and riveted, with panels of asbestos board

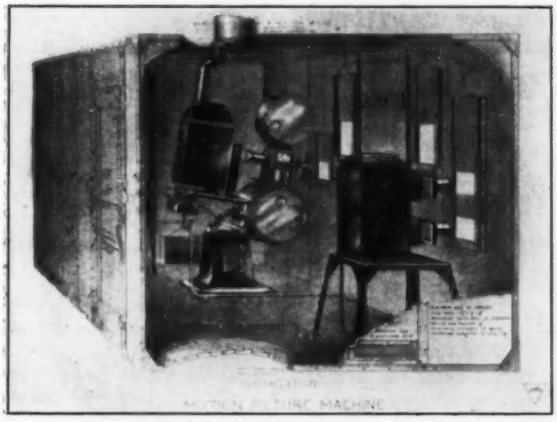


Fig. 20. Installation of Motion Picture Machine

at least ¼ inch thick fastened to frame with bolts spaced not more than 6 inches on centers, or of No. 20 gauge sheet metal fastened to frame with bolts or rivets spaced not more than 3 inches on centers. Inner face of angles and tees should present a smooth surface at joints. Asbestos or metal panels should be continuous between angles and tees and have no open seams.

Ceiling: Ceiling or top should be similar in construction to walls.

Floors: Floors, if not fireproof or incombustible, should be of matched lumber less than ⅞-inch thick with an overlay of asbestos board or equivalent material not less than ⅛-inch thick. If booth is constructed of a metal framing, floor should rest on bottom flange of base angles.

Door: Door should be of at least 2 x 5 feet constructed of materials similar or equivalent to those of the walls.

Openings: Openings for operators view or through which picture is shown should not be larger than 6 x 12 inches. Each opening should be provided with a gravity door constructed of No. 12 gauge metal overlapping opening 1 inch on all sides, when closed, and arranged to slide in grooves. Door should be held open by fusible links placed in series with fine cords so arranged so that one link will be over each machine.

Ventilation: Inlets, not less than 3 x 16 inches, should be placed on all but front sides of booth and not more than 3 inches above the floor. Openings should be covered on the outside by wire screen of not more than ⅛ mesh and on the inside by gravity doors similar to those described for openings.

Outlet should not be less than 12 inches in diameter leading from the center of ceiling and vented to the outside. Clearance between the vent pipe and unprotected combustible material should be not less than 6 inches.

Shelves: Shelves, furniture and fixtures should be of incombustible construction.

Wiring: Electrical wiring should be in accord with the rules embodied in the National Electrical Code.

HAZARDS AND EXPOSURES

By BENJAMIN RICHARDS
Manager Underwriters' Service Association, Chicago

In treating of this subject, forming part of the University of Illinois Course in Fire Prevention, the author speaks from expert knowledge, and his ideas will be found of great value.

The first subject is exposure. All exposures are hazards. The burning risk becomes a hazard to the neighboring risk, so we classify exposures as hazards. Exposure is probably neglected by property owners more than any one thing. How often we see very fine buildings put up right against a fire trap or no provision provided to prevent a fire trap going up. We are up against that in factory work a lot. The poor section of a location for any property often nullifies any other good feature one may have. You might spend a lot of money on a fire-proof building, but it can be readily burned out by a bad neighbor. The Burlington building in Chicago was a most excellent fire-proof building, but it was in poor company and when the poor company got to acting badly the fire went through the building, although it represented the best modern engineering. We paid a 60 per cent loss on that building alone.

At Evansville, Ind., a strictly fire-proof building burned. This was not an exposure fire, but it shows how a fire-proof building can be damaged. Reinforced columns were destroyed that were twelve or fifteen inches thick.

Best Built Building No Better than Its Neighbor

It doesn't matter how good a building is, if in a bad neighborhood; it is no better than its neighbor. A property owner might spend a great deal of money for fire protection such as sprinklers, fire walls, fire pumps, standpipes, hose and all that, yet, if he had a very bad neighbor, these benefits would all be nullified. A good example of that is the two or three million dollar Naumkeag Cotton Mill fire at Salem, Mass. That mill had several acres of land available when young, but the mill grew and the town grew and the factory help had to live somewhere, so three flat houses were built up to the fences of the mill. The mill people had not bought acreage enough to keep those tenements away, so, when the city of Salem burned, the mill went with it, although there was not a better protected mill in the United States. Everything known was provided to protect the mill, but the fire was too hot and when the tenements burned fire went through the mill and drank up readily all the water applied to stop it. So excellent protection and excellent construction may be absolutely of no use if there is a bad neighbor.

Importance of Exposure in Fire Protection

Architects and others advising people about building a house, store or anything else should bear that thing in mind. Nowadays most of our fire prevention work is confined to keeping up production; keeping the store or factory running. It costs much money when a fire stops production, so fire prevention must be considered from a continuity of business viewpoint. Insurance does not pay for the stopping of business, so exposures may involve serious expenses, adding a cost to the investment which should not be there. Blank walls cost money, will cut out light and handicap the fire chief if you have a fire of your own, yet they are often required to protect against a bad exposure. With an isolated property this expense would not be a factor.

(*Continued on page* 788)

Wetting Down Must Be Thorough

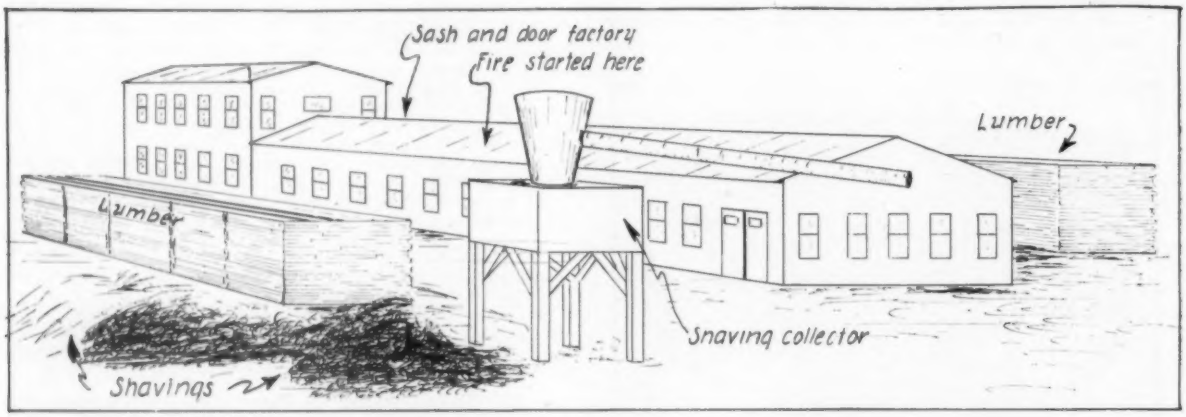
Large Part of Plant Might Have Been Saved Had This Been Given Proper Attention

THE fire described in the last issue of FIRE ENGINEERING featured a frame type of building, and which would not be permitted in its condition in a large city.

The progress of the fire which occurred in this building shows just how hazardous such types of establishments are.

As noted in the previous description of the building, it was entirely of frame construction and the housekeeping was very bad within. The building at the time of the fire was well filled with finished and partly finished wooden products, including doors, window frames, window sashes, etc. The floor was pretty well littered with shavings, while rafters were covered with sawdust and wood dust.

The shaving collector was of poor construction and did not function properly, for an investigation showed that a large amount of shavings had remained in the shaving duct leading from the building over to the shaving collector.



It was through this duct that fire traveled to the collector and eventually reached the shaving piles on the ground around.

The fire department in the city in which this fire occurred included three engine companies equipped with triple combination pumpers; one ladder company, equipped with a city service truck; one hose company, equipped with a combination chemical and hose car.

Each company averaged but three men, and depended upon call men for help. Due to the fact that the fire occurred at 2 o'clock in the afternoon most of the call men were engaged at work and the department responded to the fire with very few call men at hand.

Four hydrants were immediately available with others located at distances greater than 800 feet.

Hydrant No. 1 was 200 feet from the fire; No. 2, 200 feet; No. 3, 100 feet; No. 4, 500 feet. The pressure at the hydrants was 45 pounds at all times, indicating that they were fed by large capacity mains.

Suggested Method of Handling the Fire

Due to the distance which the fire department had to travel to get to this fire, the interior of the building was pretty well ablaze upon the arrival of the third company. The laying of two lines from engine Co. No. 1 stationed at hydrant No. 3 was good practice and made available an effective weapon against the fire.

The calling of additional help at once by the chief was good judgment. The great delay in arriving at the fire due to the distance which the department had to travel was an unfortunate condition which was beyond the control of the chief.

The department can be said to have done good work up to the time when the fire was supposed to be under control. In other words the four lines operating on the fire from engine companies No. 1, 2, and 3 were doing good work and were quickly bringing the fire into a condition which would require but wetting down and proper overhauling to complete the job.

It might be said that the detection of fire traveling through the shaving duct was a difficult matter and the members of the department could not be expected to detect it until the fire showed up in the collector. The heavy wind that was blowing and the fact that the fire reached the shavings developed a condition which required energetic work of the department.

Leaving two lines from engine Co. No. 1 operating on the main fire, the two lines were withdrawn which may be said to be good practice. These lines did their best in wetting down and apparently accomplished their task in holding the fire from spreading to lumber piles.

But here is where the only weakness in the operation showed up. It was in the department failing to make a thorough survey and see that all possible extensions of the fire were stopped. Had a survey been made through the two story building beyond the main building it would have been discovered that fire was burning on the roof and endangering this part of the plant

Surely one man could have been spared for this purpose. Had such a survey been made and fire been detected burning on the roof of the one story building adjacent to the two story building, such fire could have been quickly brought under control and probably the two story building could have been saved.

This is about the only point that can be criticized in the operation of the department.

(Continued on page 791)

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Nozzle Pressures in Varying Layouts

To the Editor:

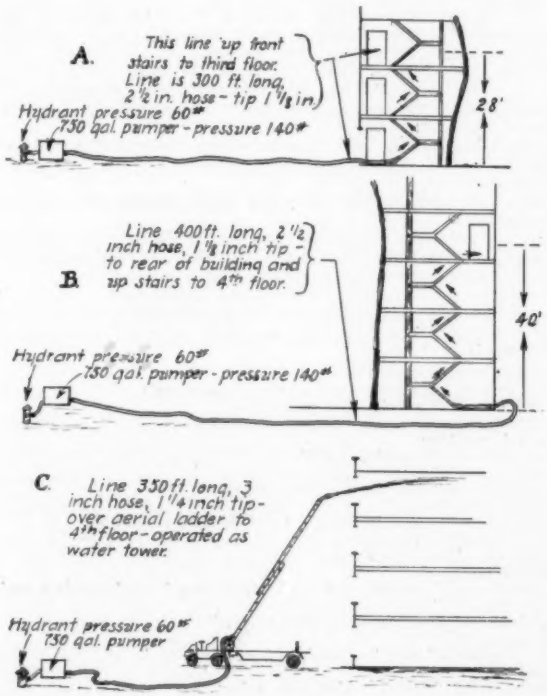
Herewith is a question which I hope you will answer in the next issue of FIRE ENGINEERING.

Assume a fire breaks out in a four story building, third and fourth floors.

In the sketch herewith line A is run to the front stairs over same to third floor. It is 300 feet long, of 2½ inch hose and has 1⅛ inch tip.

Line B goes to the rear of building over stairs to 4th floor. It is 400 feet long, is of 2½ inch hose and has a 1⅛ inch tip.

Line C is 350 feet long, 3 inch hose and has 1¼ inch tip. It


A.
This line up front stairs to third floor. Line is 300 ft. long, 2½ in. hose - tip 1⅛ in.
Hydrant pressure 60#
750 gal. pumper - pressure 140#
28'
B.
Line 400 ft. long, 2½ inch hose, 1⅛ inch tip - to rear of building and up stairs to 4th floor.
40'
Hydrant pressure 60#
750 gal. pumper - pressure 140#
C.
Line 350 ft. long, 3 inch hose, 1¼ inch tip - over aerial ladder to 4th floor - operated as water tower.
Hydrant pressure 60#
750 gal. pumper

is run over aerial ladder and played on fire on 4th floor (as a water tower).

All three lines are stretched from a 750 gallons pumper which is connected to a post hydrant having 60 pounds hydrant pressure. The engineer cuts down the discharge gate a little on both 2½ inch lines and gave them 140 pounds engine pressure.

What would be the nozzle pressure at each tip?

Sincerely your,

F. L. M.,

Boston, Mass.

Answer: Line B elevation of nozzle 3 floors at 12 feet plus 4 feet above 4th floor, giving a total of 40 feet.

This elevation represents a back pressure of 40 x .434 or 17 pounds approximately.

Effective engine pressure is then 140 less 17 or 123 pounds.

Nozzle pressue equals engine pressure divided by 1.1 plus K. L.

Nozzle pressure equals 123 divided by 1.1 plus .167 x 8 (K equals .167 and there are 8 lengths of hose in the line).

N. P. equals 123 divided by 2.436 or 50½ pounds.

Line A. Elevation of nozzle 2 x 12 plus 4 or 28 feet.

This represents a back pressure of 28 x .434 or 12 pounds.

Effective engine pressure is then 140 minus 12 or 128 pounds.

Nozzle pressure equals 128 divided by 1.1 plus .167 x 6 (K equals .167; 6 lengths in the line).

N. P. equals 128 divided by 2.102 or 61 pounds.

Line C. It is assumed that this line is operating at about the level of the third floor, or 36 feet above the street.

Back pressure equals 36 times .434 or 15.6 pounds.

Effective engine pressure is then 140 minus 15.6 or 124.4 pounds.

Nozzle pressure equals 124.4 divided by 1.1 plus .248 x 7 (K equals .248; 7 lengths in the line).

N. P. equals 124.4 divided by 2.836 or 45½ pounds.

Some Cleveland Questions with Answers

To the Editor:

Being a subscriber to your wonderful magazine, I am taking the liberty of asking a few questions on the following subjects:

(NOTE: *Questions 1 and 2 were answered in the July 25 issue.* —EDITOR.)

3. How would you fight a fire and what precautions would you take in the following establishments?

A. Paint and varnish factory

B. Grain Elevator

C. Celluloid Manufacturing

4. What is fire?

5. What is smoke?

Hoping to receive an early reply, I am

Respectfully,

T. J.—Cleveland, O.

March 30, 1926.

Answer:

3-A. Stocks of white lead, zinc and colors ground in oil do not possess any special hazard, except that the oil is combustible, and will burn freely if heated to ignition temperature. The handling and use of paints do, however, present serious hazards, if material such as rags, paper, sawdust, etc., which have absorbed them are not promptly removed or destroyed. Some mixed paints and varnishes contain inflammable volatiles, and where these are prepared or used, special precautions are necessary as regards to open lights or fire.

Turpentine substances are dangerous. Paints in which turpentine substances are used is a hazard if a flame or an open light be brought near the containing vessel or freshly painted surface. Many ready mixed paints, especially of the cheaper grades, have low flash points, which means a low point of ignition.

Fires in varnish works usually originate from stills boiling over or from carelessness in the housekeeping of the plant. Where a still takes fire and the cover blows off, great care must be exercised to permit no water to enter the still for if water does enter it the contents are sure to boil over.

If foam apparatus is available it can be used very effectively in extinguishing such fire, but if it was not on hand and if there is no steam to work with, then the only thing to do is to cool the adjacent stills down and permit the varnish in the still which is burning to consume itself.

Where a still boils over there is always a danger of the burning varnish reaching a stairway, a shaft, or other vertical passageway and getting to floors below, carrying fire with it.

In such a case plenty of water will have to be used to prevent the extension of the blaze.

The oil soaked floors, together with the large stock of oils and paints make a particularly hot fire and a fast traveling one. Once the fire gets control of a floor in this type of establishment the building is pretty sure to go.

It is most essential that the fire be checked in its incipiency, otherwise the chances of saving the establishment are small.

3-B. Fires in grain elevators are difficult to fight. Even in the working house the only windows are so high up (above the bins) that streams cannot be used effectively from the outside. Bins have no openings between their tops and bottoms, so that where the grain takes fire there is no way of getting at it except through the top, which means the creation of hazards incidental to water in bins.

The long, unobstructed passageways through which the elevator chain belts travel make it possible for fire to travel from the bottom to the top of the working house without hinderance.

The open passageway over bins, whether in the self-contained type of elevator (working house and bins all under one shelter), or in the elevator having a working house and storage bins separate are unobstructed, and make possible the travel of fire throughout the structure horizontally.

If the conveyor belting is of rubber, or oil-soaked leather, it provides an additional aid to rapid spread of fire horizontally, for these belts run from one end of the structure over bins to the other.

If the structure is not too high for ladders, the very first step that should be taken by the fire department is to open up over the fire. This is most essential where the fire is in the working house and extending upward. Without opening up, it is impossible for men to work their way up the narrow stairs with the intense heat and smoke backing down upon them. On the other hand, once the top is opened, the heat and smoke are drawn upward, and a single line worked up along the stairway can accomplish the task.

Ventilation, too, lessens the danger of dust explosions.

If the fire has originated due to dust explosion, it is likely that both the working house and galleries over bins will be involved. In this case it will be necessary to open up over both the working house section and after killing the fire here, work along in the gallery, driving the smoke to the far end.

Care must be exercised in the use of water above bins, for here the damage can be done. Water carefully used and allowed to drain through hoppers into bins may result in the bursting of the bins. When using water over bins, keep streams from entering top of hopper, unless grain therein is afire. In this case, use no more water than absolutely necessary to handle the fire.

Where there is a lot of wooden work in working house, reaching the entire height of the structure and this takes fire, about the only thing that can be done is to get heavy streams at work just inside the doors and direct them upward to kill as much of the fire as possible, and then follow up with small streams.

When elevator houses are too high to reach the top with ladders on the outside, the only thing that remains to do is to concentrate all lines into large streams inside doorways. Care must be exercised to protect the men from falling debris, such as broken conveyor belts or chains, platforms, etc.

Precautions to be observed in fighting grain elevator fires are hazards incidental to dust explosions and expansion of wetted grain. Grain dust, when mixed with air is highly explosive. Streams will stir up dust lying along rafters, sills, or other pockets. Take precautions in dusty atmosphere in grain elevator where open flame is present. Put no more water on grain than absolutely necesary, for on swelling it exerts sufficient force to displace walls or floors.

3-C. In fighting a fire in a celluloid factory it is necessary to observe precautions and hazards incidental thereto. Precautions to be observed are: Provision of an abundance of ventilation, use of liberal quantities of water in wetting down the burning celluloid and surrounding materials; removing the unburned and exposed celluloid dust which may have accumulated around the plant; prevent exposure of men to fumes from decomposing celluloid.

Hazards encountered at a fire of this nature are the highly combustible nature of celluloid products; the explosiveness of the fumes thrown off by decomposing celluloid; the danger to life on inhaling these fumes which are poisonous and the presence of dust from celluloid articles thrown off by buffing wheels or saws and which may explode upon being disturbed and ignited.

4. Fire as applied to in this question is the principle of combustion as manifested in light, especially flame, and in heating, destroying, and altering effects. It was formerly regarded as a tenuous material substance, and anciently classed as air, earth and water, as one of the four elements.

5. Smoke is the gaseous product of burning organic materials, as wood, coal, peat, etc., when rendered visible by the presence of small particles of carbon, which usually settle as soot.

Smoke is always the result of imperfect combustion. Hence, sometimes, technically, any such incompletely burned volatilized product whether visible or not.

Testing Engines for Capacity and Pressure

To the Editor:

I have been advised to write you concerning certain questions. I assure you your answers will be greatly appreciated.

The terms capacity and pressures as applied to the gear ratios of rotary fire pumps has never been quite clear to me. Will you be so kind as to explain:

1. (a) The term capacity.
   (b) What would be a probable hose layout where the capacity ratio would be used?
   (c) What pump pressure would be required to give a fair fire stream with said layout?
2. The same question but applying to high pressure.

Sincerely yours.
H. W. L.,
Islip, L. I., N. Y.,
March 28, 1926.

Answer. (a) The term "capacity" as applied to the gear ratio of a rotary pump represents the capacity when the pump is operating at its highest safe speed—which usually represents a gear reduction of 1½ to 2 from the engine speed. In other words where the engine speed is 1,500 R. P. M., the pump, when operating at capacity (with a gear ratio of 2 to 1), would be operating at one half of 1,500 or 750 R. P. M.

In the case of smaller pumps the gear ratio may be 1½ and if the engine were turning over at 1,500 R. P. M. the pump would be turning over at 1,000 R. P. M.

No rotary pump in fire service is made to operate at the same speed as the engine—there is always a gear reduction.

In case the pump is being operated at "pressure," then the gear reduction is greater. It may run from 2.3 to as high as 4. That is, for every 2.3 revolutions of the engine or 4 revolutions of the engine there would be respectively 1 revolution of the pump.

(b) The probable hose layouts where the capacity ratio of pumps were being employed would depend upon the capacity of the pumps.

The following figures show the usual layouts with various size pumps:

In the following figures the first test is the capacity test and the second test is the pressure test. The first test would give the maximum capacity of an engine with a pump pressure in the neighborhood of 120 pounds where the second test in each case would be a test for pressure of 200 pounds at the engine. The third test would be a pressure test with an engine pressure of 250 pounds.

300 gal. machine.
1st test—1" nozzle—2-200' (1⅛" nozzle 1-250').
2nd test—¾" nozzle—Use gate valve.
3rd test—¾" nozzle—Use gate valve.

350 gal. machine.
1st test—1⅛" nozzle—1-150'.
2nd test—¾" nozzle—Use gate valve.
3rd test—¾" nozzle—Use gate valve.

375 gal. machine.
1st test—1⅛" nozzle—2-200' (1¼" nozzle, 1-150').
2nd test—Use gate valve.
3rd test—Use gate valve.

400 gal. machine.
1st test—1⅛" nozzle 2-50', 1¼" nozzle 1-150', 1⅜" nozzle 1-200'.
2nd test—¾" nozzle—Use gate valve.
3rd test—¾" nozzle—Use gate valve.

500 gal. machine.
1st test—1⅜" nozzle 2-300', 1⅜ nozzle 1-150'.
2nd test—⅞" nozzle—Use gate valve.
3rd test—⅞" nozzle—Use gate valve.

600 gal. machine.
1st test—1½" nozzle 2-150', 1⅝" nozzle, 2-300'.
2nd test—1" nozzle—Use gate valve.
3rd test—1" nozzle—Use gate valve.

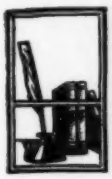
750 gal. machine.
1st test—1⅝" nozzle 2-100', 1¾" nozzle 1-100', 1-150', 1⅞" nozzle 2-200'.
2nd test—1⅛" nozzle 1-300'.
3rd test—Use gate valve.

800 gal. machine.
1st test—1⅞" nozzle 1-100', 1-150', 2" nozzle 2-200'.
2nd test—1⅛" nozzle 1-250'.
3rd test—Use gate valve.

1,000 gal. machine.
1st test—2" nozzle 2-100'.
2nd test—1⅛" nozzle 1-100', 1¼" nozzle 1-150', 1⅜" nozzle 1-200'.
3rd test—1" nozzle 1-500' or use gate valve.

(c) The pump pressures stated above, 120, 200 and 250 would give very satisfactory pressures at the nozzle in each case. The 120 pounds would apply to capacity while the 200 and 250 would apply to pressure tests.

In the testing of fire engines care is observed never to let the nozzle pressure fall below 40 pounds for the characteristics of the gauges are such that readings below this point are apt to give inaccuracies.



WITH THE EDITOR

What Is It Coming To?

If press reports are correct, Safety Director Edwin Barry of Cleveland, Ohio, classifies his fire fighting force as a lot of "bums", and suggests that washing machines be placed in each Fire Station in order that the firemen may do the laundry of the fire houses.

If Director Barry has no more respect for his men than to classify them as "bums", they cannot be expected to have much respect for him.

If his firemen are "bums" as he states, then he ought to get rid of the whole force.

It certainly does not speak highly of his administration nor of his judgment and executive ability to admit that the men that his own department has, under his guidance, trained rank with "bums."

To the bystander it would seem that the Director, like a lot of other politicians, hasn't the least idea of what his department does. Certainly he cannot be familiar with the work of the men, their responsibilities, the dangers they have to face, and the work they must do both in drilling and around the station to place them in the category in which he has established them.

As the Civil Service Commission has graded the men in the Cleveland Department and authorized for employment only those who are mentally and physically equipped, it would seem that it is a question of the Director's opinion as against that of the Commission. To those familiar with the workings of Civil Service Commissions there can be no doubt as to who is wrong. It is indeed unfortunate that a large Department the size of Cleveland must serve under a man of his traits, and also that he is placed in a position where he is enabled to serve as the mouthpiece of his department.

It is gratifying, indeed, that newspapers universally sided in with the men and called the Director to task.

As far as washing clothes by firemen is concerned, it is not likely that the members of the Fire Department who are continually working with water would raise any great objections. But, if Director Barry wants a department made up of old washer-women, why go to the trouble of training his present force to that state. Wouldn't it be better to instruct the Civil Service Commission to issue an examination for washerwomen and avoid the unnecessary delay which would result if Barry follows out his present plan?

The Latest Hazard

It is about all the fire fighting forces of this country can do to keep pace with the development of new fire hazards.

The latest thing out is the celluloid eye shade, and judging from the phenomenal growth in popularity of this device, it is reaching proportions where it deserves urgent attention. It is not so much from the standpoint of the individual that the hazard is created as it is in the cases of stores handling these highly inflammable devices. It requires hardly more than a spark to ignite them, and once they are fired their destruction is rapid, and it generates intense heat. Fire prevention officials should keep their eye on this latest hazard. Calling attention of the public to the danger of using matches or cigarettes when wearing these eye shades would also not be amiss. Here's an opportunity to pass information on to the daily press which would be of news value and which might result in the elimination of some accidents.

A Just Victory

Over a year ago the people of St. Louis, Missouri, voted to increase the pay of firemen of that city from one hundred fifty-five to one hundred eighty dollars per month.

Following this the city refused to make payment in accordance with the popular vote so the matter was brought before the Supreme Court through the Firemen's Organization of that city.

The decision of the Court was that initiative ordinance adopted at the election was valid and was properly and legally submitted and enacted under the charter provision. The Court ordered that a peremptory breach of mandamus be issued against the officials constituting the Board of Estimate and Apportionment of that city. As a result the firemen are to receive back pay totalling over three hundred thousand dollars.

This affair has several points which are indeed pleasing to the student of fire department matters. In the first place, a precedent has been set in a method of overcoming opposition of politicians to increasing salaries of firemen.

Secondly, the public has been shown to be the final judge and what it says the city officials must do.

That Fire Department members as a rule are a very much underpaid group of employees cannot be denied. This was particularly so in St. Louis and the victory won by the fire department organization in that city deserves commendation.

It is to be hoped that other fire departments will show similar courage and initiative to follow in the steps of St. Louis.

Speed of Returning Apparatus

Quite frequently the question arises as to what the speed of apparatus returning from fires should be. Larger departments cover the subject by rules and regulations and in the majority of cases hold the fire trucks down to speed of commercial trucks, when returning from fire.

This is satisfactory practice for large cities where the demands upon each piece of apparatus are limited. But in smaller cities and towns where there may but two or

three pieces of apparatus in service the story is quite different.

Recently the Fort Dodge, Iowa, fire department was criticised on account of what was thought to be excessive speed of the apparatus in returning to quarters after a fire. Chief H. J. Callahan put all his critics at rest by pointing the nature of the work of fire department, the amount of the equipment in his city and the foremost desire to observe every safety rule.

He sized up the situation very concisely when he made the following statement: "There are three trucks on the floor that are in everyday use. A call in the business district takes two of these trucks out of the station. A second call from a residential district, and such an occurrence in a city of 23,000 is no rarity, leaves only an aerial truck at headquarters. That explains the necessity for the hurried return run."

In determining the speed at which fire trucks should return from fires, the amount of responsibility placed upon each truck must be taken into account. If, as in the case of Fort Dodge, a single truck cannot be spared from service for any length of time, then it is perfectly logical that the rate of travel returning from fires should be nearly as great, if not as great, as the speed in responding to an alarm.

Fire departments observing every precaution for the safety of the apparatus and the public need not fear accidents any more in returning than they do in responding to an alarm. As a matter of fact there is less likelihood of accidents in returning from fires (where the apparatus is returning at the same speed as it travels to the fire) for there is less excitement when men are returning to the station than when going out to a fire, the proportions of which they know nothing.

Foamite Takes Over Amdyco

As indicated in the announcement below, issued by the Amdyco Corporation, The Foamite—Childs Corporation, of Utica, N. Y., will, in the future, handle and market all Amdyco Generator Products.

"ANNOUNCEMENT: Under an arrangement that should prove valuable to present and future users of the Amdyco continuous foam method of fire-fighting, the Foamite—Childs Corporation will henceforth market and service all Amdyco Generator products.

"Success with fire apparatus of any kind seems to be governed by three essentials: the selection of the most suitable appliances for the property to be protected, the proper maintenance of those appliances, and reasonably expert operation of them in an emergency. On all these points, experience proves that the marketer of fire appliances must stand ready at all times with expert advice based on practical knowledge and seasoned experience.

"The Foamite-Childs Corporation, having an established country-wide organization that has been devoting its whole time and thought to fire protection engineering for many years, is preeminently qualified to give this assistance to our customers.

"The New York office of the Amdyco Corporation will continue to fill orders addressed to it, but the complete service will be under the direction of Foamite-Childs Corporation, with general offices and factory at Utica, N. Y., and a competent staff of sales and engineering representatives in all the leading cities of the world.—AMDYCO CORPORATION.

Chief Stanton Not to Retire

Friends of Howard Stanton, chief of the fire department of Norwich, Conn., have prevailed upon him to continue as head of the fire department and to remain as an active fire preventionist of the city.

For some time Chief Stanton had planned to retire from the service after he has served the city for twenty-five years. Many of his well wishers hope that he will continue to head the department for many years to come.

Granger Made Dean of Cleveland School

First Assistant Chief James E. Granger of Cleveland, Ohio, has been appointed dean of the fireman's school which will be established soon by Chief George A. Wallace. The appointment was made public by Edwin D. Barry, safety director. The school was planned after a recommendation made by the National Board of Fire Underwriters.

The course of instruction will cover such topics as use of fire equipment, location of fire hydrants and a knowledge of the city streets, laws and ordinances of the department, city and state, fire prevention, and problems of discipline. It is possible that instruction will be given in life-saving methods.

Instruction will not only be given to the firemen but courses will be planned that will be compulsory for the officers of the department.

Chief Granger said, "It will be one of the finest things which the department has had in years, and it will be reflected in less fires and lower insurance rates."

Fire Siren Installed in Lowville, N. Y.—A Sterling fire siren operated by a 12-h.p. motor has been installed in Lowville, N. Y.

Voorheesville, N. Y., Installs Fire Alarm—A new fire alarm system purchased from the Federal Electric Company has been installed in Voorheesville, N. Y.

Marshalltown, Pa., Returns to use of Bell—The council of Marshalltown, Ia., has decided to go back to the use of the fire bell for the transmittal of fire alarms. A code of numbers will be used in giving the location of fires by the bell.

Kite Causes Fire and Darkens Town— A boy's kite entangled in some of the high tension wires of Lansford, Pa., caused a short circuit blowing out an oil fuse in the central power station, and soon the entire plant was ablaze. The town was in darkness, and newspapers were forced to suspend operation.

Check Presented to Chief Scott

Some conception of the high esteem that Chief Ralph J. Scott of Los Angeles, Cal., is held by his men can be gained by the gift which they presented him. Members of the fire department and friends on the outside contributed and presented him with a check for $10,000 in order that he might purchase a home.

The check was presented to the chief by Maurice H. De Mond, president of the Breakfast Club as noted in the July 10 issue.

According to Jay W. Stevens, fire marshal, this is the first time to his knowledge that a chief of a fire department was presented with a home.

CELLULOID, IGNITED BY SPARK, CAUSES FATAL FIRE IN FACTORY

Auto-Top Shop in Rockford, Ill., Gutted, With Loss of Six Lives—Fire Spreads With Lightning Rapidity

A FIRE which strongly illustrated the hazard of large quantities of celluloid being exposed to possible ignition, without any safeguards, was that which occurred in Rockford, Ill., when the Sutton Top Shop was destroyed recently. The result was the burning beyond recognition of five women

Diagram, Fire District, Rockford, Ill.

employees, the death by injuries later of another, and the more or less serious injury of a large number of men and women employees of the shop in making their escape from the burning building.

The apparent cause of the fire was the falling of a spark from a band saw motor on some peaks for caps made out of celluloid.

Besides this type of manufacture, the concern makes automobile tops, and kindred goods. On the lower floor a large quantity of celluloid was awaiting use in the various types of goods and to this mass the fire spread with lightning rapidity. Water thrown on the fire only served to increase its intensity, and in an incredibly short time the flames leaped to the second floor of the building, where a large number of women were employed.

It was among these girls that the loss of life and injury occurred. It is claimed by the proprietors that if the women had remained calm all would have been rescued, as they were being led to safety by these men, when panic seized them and they broke in all directions, only to be caught by the onrushing flames.

The illustrations, furnished through the courtesy of Chief Thomas D. Blake, of the fire department, show the devastating effect of the flames, with the spot marked where the five bodies of the victims were found after the fire.

The alarm for the fire was received at the fire alarm office by telephone at 4:35 p. m. However, even before this had come in, Captain C. E. Strom, of Hook and Ladder Co. No. 1, at the central fire station, had discovered the fire through an alleyway leading from the top shop to the fire station. (See diagram), and the apparatus was on its way. Engine Cos. 1, 2, 3 and 7 and Truck Co. No. 1 responded to the first alarm, but Chief Blake at once sent in a second, and Engine Co. No. 4 was also put in service. The apparatus consisted of four Ahrens-Fox and one Seagrave pumpers, and one Seagrave 75-foot aerial, and 35 men were in service at the fire. Eight hydrants, ranging from 150 to 300 feet apart, were used, with pressure of 65 pounds. Six engine streams were thrown with nozzles 1⅛ inches, and street main of 8-inch size.

In describing the fire Assistant Chief Matt Long said: "We were sitting in the central station about 4:30 o'clock, when one of the boys saw the flames. We can look right up the alley and see the rear of the shop. In a moment, a large puff of flames shot out of the back doors and windows and the entire rear end of the shop was a mass of flames. I never saw a fire spread so rapidly in my life."

ORPHANAGE BUILDING SAVED IN THREE-ALARM WAREHOUSE FIRE

Cleveland Has a Threatening Blaze in Big Manufacturing Establishment—Firemen Have Narrow Escapes from Flames and Falling Walls

A FIRE originating in the basement of the building from an over-filled incinerator practically gutted the brick plant of the Frankelite Company, on Woodland Avenue, Cleveland, Ohio, on June 10. When the fire was discovered the superintendent of the plant and a foreman of the establishment's finishing department, ran up through the building, warning the eighty women employed on the upper floors to flee for their lives and assisting them to escape. In doing this the two men mounted to the third floor, and after all of the women had been safely gotten out, found themselves trapped by the flames with no means of exit.

Captain William Logan, of the fire department, with a lieutenant and a private, went to the rescue of the two men, and brought them out in safety, being slightly burned in performing this work.

Two other members of the fire department were trapped on the roof and had to be taken down a ladder by their comrades, being compelled to hang from the roof by their fingers until rescued. Another contingent of twelve men had a close call, jumping to safety just in time to avoid the collapse of the rear wall of the building.

When Assistant Chief Granger arrived, he at once realized the seriousness of the situation and sent in a second alarm, following it up almost at once with a third. This he did when it

Interior (Upper) and Exterior (Lower) of Sutton Top Shop, Rockford, Ill., Gutted, After a Large Qantity of Celluloid was Ignited. The Cross on the Illustrations Show the Spot where Bodies of Five Women were Found, Burned Beyond Recognition.

looked as if the Jewish Orphanage, next door to the Frankelite plant, would take fire. Chief Granger ordered the orphanage vacated and all the occupants were gotten out safety, two children in the hospital ward being carried out on cots.

The orphanage, however, was saved by the fire deparment. According to Chief Granger, this is the third fire that the company has experienced, and an investigation by the fire marshals has been ordered. The company manufactures electrical equipment and devices.

Courtesy of The Cleveland Press.

Cleveland Firemen Fighting the Big Warehouse Blaze in that City.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

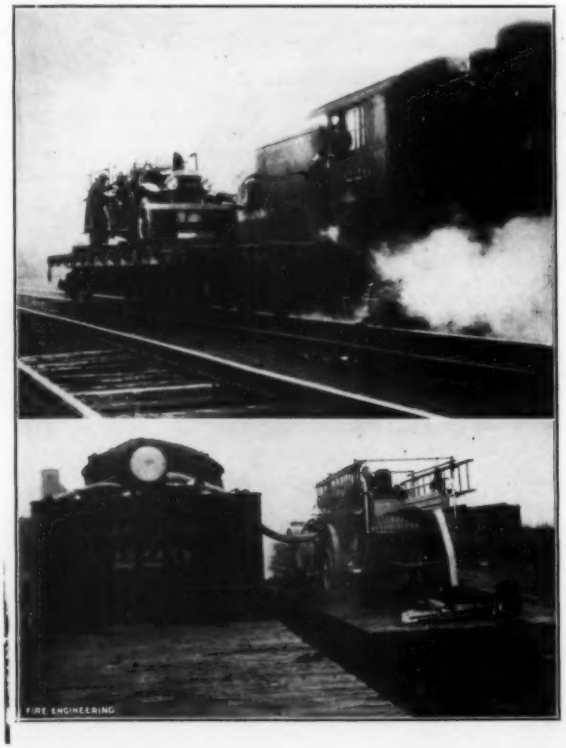
Week Ending July 23

WEST PALM BEACH, FLA.—Business establishments damaged 40
BILLINGS, MONT.—Barn owned by Tom Malstrom destroyed 25
WATERTOWN, N. Y.—Home of B. I. Miller of Albany, on Deer Island, destroyed 85
DELAFIELD, WISC.—Riveris Road House near here destroyed 30
MOSCOW, IDAHO—Two warehouses and elevator destroyed.. 80
CHICOPEE, MASS.—Hotel Griffin destroyed 50
MARION, ILL.—Garage of Wesley & Morris Hayton destroyed 80
EAST CHICAGO, IND.—Acme Oxy-Acetylene Company plant damaged 30
HUTCHINSON, KANS.—Amphitheater in Riverside Park destroyed 35
EDWARDS, MISS.—Four business establishments destroyed.... 35
SEDALIA, MO.—Wilcox-McFarland Drug Company and building at 104 West Main Street damaged 45
FOSTORIA, OHIO—Buildings of Strouse Pipe & Machinery Company destroyed 25
BIRMINGHAM, ALA.—Property of the Strowd-Holcombe Cotton Mills destroyed 25
ROBLIN, MAN.—Several business houses destroyed 40
CLEARFIELD, UTAH—Smith Canning Company, half mile south, destroyed 120
JEROME, ARIZ.—14 residences destroyed 40
FROID, MONT.—Four business establishments destroyed 60
TUCSON, ARIZ.—Triple fire in warehouse district 45
ELKTON, MD.—Elkton Realty Company Building destroyed.... 60
MINNEAPOLIS, MINN.—Storage room of Reed Motor Supply Company 50
VALLEY MILLS, N. Y.—Milk station owned by J. H. Muller of New York City destroyed 45
DANVILLE, CALIF.—Danville Emporium, three residences and a number of garages destroyed 25
ST. LOUIS, MO.—Plant of Pillow Manufacturing Company.. 50
HAVERHILL, MASS.—Island Box Company, Bradford Section. 30
TORONTO, ONT.—Plant of Newcombe Piano Company destroyed 80
LONDON, ONT.—Carling Export Brewing and Malting Company. 35
STRYKER, OHIO.—Stryker Boat Oar and Lumber Company plant. 45
RANDOLPH, MINN.—School building damaged 60
PHILADELPHIA, PA.—Store of H. Solomon, 1642 Market St.. 40
FORESTVILLE, WIS.—Hotel Central Poh's dance hall and residence damaged 25
CLINTON, IOWA.—William Strive mill near here, destroyed.. 60
HILES, WIS.—Sawmill of C. W. Fish Lumber Company..... 45
WARREN, PA.—Warren Refining Company plant at Venturetown 160
SIDNEY, OHIO—Pavillion at West Lake Park owned by F. M. West 40
SCRANTON, PA.—Plant of Scheuers Baking Company 120
ATCHISON, KAN.—Unit of Blair Elevator Corporation destroyed 200
FOREST GROVE, OREG.—Barn of Robert Warrens and residence of Joe Spiering destroyed 25
ALBANY, OREG.—Albany Tanning Company plant owned by Al Sterberg destroyed 40
PHILADELPHIA, PA.—Portion of Chambers Brothers' Machinery Company plant damaged 25
PITTSBURGH, PA.—Thirty automobiles destroyed in Burgunder Brothers' garage at McKees Rocks 80
BRIDGEWATER, S. DAK.—Mine business establishments destroyed 80
EAST BOSTON, MASS.—Atlantic Works, shipbuilding plant, damaged 160
TRENTON, N. J.—Buildings and equipment on Willow Gate Farm owned by E. Edward Murray, Jr. 60
PINE BROOK, N. J.—Boarding house owned by William Halprin 40
PATERSON, N. J.—Interior of U. S. Motion Picture Theatre destroyed 80
NEWARK, N. J.—J. Wm. Hatt Sash Plant damaged 80
PLACERVILLE, CALIF.—Seven establishments in business section 25

Week End'ng July 30

OXFORD, MISS.—Oxford Ice Company, True Hixon Lumber Company mill destroyed 30
ALLENTOWN, PA.—Two kilns of Lehigh Brick Company damaged 40
CIRCLEVILLE, OHIO—Goeller Brown Mfg. Company plant destroyed 120
NIAGARA FALLS, N. Y.—Yard of Maloney Coal Company damaged 40
HAGERSTOWN, MD.—Sulphur plant of Hagerstown Orchard Spray Co. 30

(*Continued on page* 791)



Water Supply to Fight Fire Drawn from Locomotive Tanks.

When the Railway Y. M. C. A. Building of Minoa, five miles from Syracuse, took fire recently, the larger city's fire department was appealed to and Chief C. S. Coombs sent a pumper on a flat-car. As no water was available, locomotives in relays drew up beside the fire apparatus, and the water was drawn from their tanks in fighting the flames. The lower picture shows suction and discharge lines of pumper. Unfortunately the fire apparatus arrived too late to save the structure involved.

INDUSTRIAL PLANT PROTECTION

Pyroxylin Finishes and Their Hazards*

By H. L. MINER
Manager, Safety and Fire Protection Div.,
E. I. du Pont de Nemours & Co.

The adoption and rapid spread of the use of quick drying pyroxylin finishes, of which Duco was the pioneer, has brought about new conditions of work, the possible effect of which upon fire hazards has aroused considerable apprehension in insurance circles and elsewhere. There have already appeared public statements which if taken at full value, would indicate that the application of these quick drying finishes either by brush or spraying is attended by grave dangers. From the form in which these statements are made, it appears evident that hasty conclusions have been drawn, based on deduction rather than upon investigation of facts.

The development of pyroxylin finishes and their application to a wide variety of uses marks a distinct step in industrial progress. It is a common experience that when a new development represents real progress, even though it may apparently introduce hazards somewhat greater than those present in accepted practices, its adoption is finally accompanied by greater safety as well as improved economy. However, this result may be preceded by a period of adjustment to new conditions during which unfortunate experiences of one sort or another occur through failure to take what are only reasonable precautions.

Fires Due to Carelessness

The fires which have occurred have resulted primarily from bad housekeeping and carelessness. These fires have served to emphasize the importance of proper installations and their proper maintenance.

During 1924 and the early part of 1925, the Manufacturing Risks and Special Hazards Committee of the National Fire Protection Association, prepared a set of suggestions for "Safeguarding the Storage, Handling and Use of Pyroxylin Finishes." These suggestions were presented at the 1925 Annual Meeting of the Association and have been very extensively followed during the past year. Had these suggestions been followed in all essential details, such fires as the Luce Furniture Company, Unit Construction Company and the Haynes-Ionia Company would not in all probability have occurred, or would have been controlled with little or no loss.

Pyroxylin vs. Enamel Hazards

There appears to be considerable speculation at the present time as to the hazards introduced through the use of pyroxylin compounds as compared to those resulting from the use of enamels, paints, varnishes and other oil finishes. In this connection, it should be remembered that quick drying pyroxylin compounds and their thinners (lacquers) have been used for some thirty years and heretofore have never provoked much apprehension. It is true that oil finishes were used many years before lacquers and the fire loss record is relatively small where proper precautions have been taken, yet there have been many series fires resulting from the improper use of these finishing materials. During 1925 the spraying of ordinary oil and gum varnish was responsible for the complete destruction of two furniture factories in the South. These plants were equipped throughout with modern automatic sprinkler systems having good water supplies. The vapor flash open so many heads that the sprinkler systems were overtaxed and the fire spread beyond control.

Enamels, paints and varnishes which are not pyroxylin compounds, as you know, are basically a mixture of a vegetable oil, gums and resins, usually thinned with turpentine, although in the cheaper grades there will be found turpentine substitutes and light hydrocarbon oils, such as gasoline, naphtha, etc. Vegetable oils dry by oxidation. Turpentine dries through both oxidation and evaporation. Therefore, generally speaking, the drying of oil finishes depends upon both oxidation and evaporation. The drying and oxidation is sometimes accelerated by placing the article which has been coated (brushed, sprayed or dipped) in ovens or heated rooms. Many serious explosions have occurred, especially in bake ovens.

Pyroxylin Hazards During Spraying

Pyroxylin finishes, generally speaking, dry entirely by evaporation of their solvents, not by oxidation. The inflammable vapor hazard present during the drying process, is undoubtedly more acute from a quantity standpoint and rapidity of development than is the case with the drying of oil finishes, except possibly oil finishes of the quick drying type in which gasoline, naphtha or similar thinner is used.

Due to the oxidizing characteristics of some of the materials used in oil finishes, there is always present the spontaneous combustion hazard where these compounds come in contact with rags, waste, sawdust and similar combustibles. Thus far, what is known as the spontaneous combustion hazard of oil finishes is not as pronounced in finishes of the pyroxylin class. However, the spraying of pyroxylin finishes usually produces an inflammable deposit or residue, a fire hazard which must not be overlooked and which will be taken up in detail later on.

As regards storage, inflammable liquids and compounds such as enamels, paints and varnishes, bronzing liquids, shellacs, turpentine and its substitutes, pyroxylin finishes and their thinners, etc., when stored in sealed original metal containers, do not present an active fire hazard. The latter results when the containers are opened and when contents are transferred or handled by means of open containers or receptacles. This is due to the opportunity afforded the vapors to escape and to become ignited by various causes.

The following statement gives in substance an opinion recently rendered by the Executive Office of the National Fire Protection Association.

". . . . the storage and handling of lacquers in original metal sealed packages involve a hazard that is not materially different from that in any paint and varnish store where the usual stock of paints, varnishes and enamels is carried. Ordinarily, paint or varnish is dangerous under fire conditions. Personally, I do not feel that pyroxyline lacquers when stored in reasonable quantities in original sealed containers involve any additional fire hazard of sufficient moment to justify the imposition of discriminatory regulations."

Storage conditions in manufacturing plants should conform to the National Fire Protection Association's suggestions for storage, as found in the Pyroxylin Finishes pamphlet.

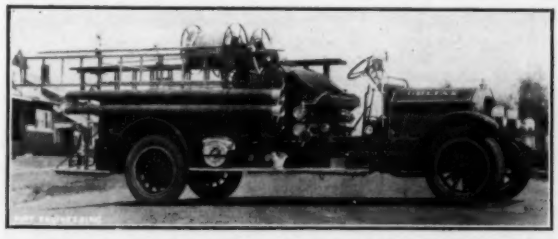
Spraying

Coming to the question of spraying, the inflammable vapor hazard resulting from spraying pyroxylin finishes can be entirely eliminated by good ventilation, for when sufficiently diluted the vapors are harmless. Good ventilation is also necessary when paint, enamel, varnish, shellac or a similar finish is applied by spray methods. The question of ventilation has been covered in detail in the National Fire Protection Association's suggestions, copies of which you have all received.

The other principal hazard brought about by the spraying of pyroxylin finishes is the formation of a combustible deposit or residue. When spraying pyroxylin compounds which contain volatile inflammable thinners, the particles or globules which do not strike the article being coated dry almost immediately, forming the combustible deposit or residue just mentioned. It might be noted that this particular hazard is not present when pyroxylin compounds are brushed or used for dipping.

The deposit or residue which may collect in the ducts, spray booth or spray room is very inflammable and when suspended in the air as a dust cloud in proper proportions introduces the same explosion or flash hazard as sugar, starch, flour, sulphur, wood dust and other inflammable dusts. The residue or de-

* Paper read before Dominion Fire Prevention Association.



Kenosha Fire Apparatus Delivered to Colfax, Ia.

A 400-gallon pumper equipped with a booster tank and built by the Kenosha Fire Engine and Truck Company has been delivered to Colfax, Ia. The pumper has successfully passed the tests of the Iowa State Underwriters.

posit itself, however, unless suspended in the air in the form of a dust cloud cannot be exploded.

Pyroxylin Lacquers Not Explosive

At this point I want to make another fact clear because there seems to be quite some misunderstanding in the matter; that is, pyroxylin finishes, or lacquers or their thinners, either separately or when mixed together are not explosive.

The residue as far as is known today is not subject to spontaneous heating under normal temperatures, but on account of its pyroxylin content may be subject to spontaneous decomposition under unusual conditions of heat and moisture. Some deposits have been exposed to temperatures of from 185 deg. F. to 194 deg. F. for thirty-two days without any apparent change in character. It is to be noted that these temperatures are 100 deg. F. over the upper limits of what are known as ordinary room temperatures. Other samples when exposed to temperatures of steam at atmospheric pressure (212 deg. F.) decomposed in from fourteen to thirty-five hours. Such decomposition has never occurred, to my knowledge, outside of the laboratory where conditions were more favorable than will be found in actual practice. However, they indicate the importance of not allowing deposits from pyroxylin finishes to collect and remain on steam coils or other heating or heated devices.

The fire hazard introduced by this deposit or residue can be easily safeguarded if not entirely eliminated by good housekeeping, and the importance of good housekeeping cannot be over-emphasized. This phase of safeguarding the use of pyroxylin finishes is so important that I wish to call particular attention to sections in the National Fire Protection Association Pamphlet covering this subject.

"Floors of spray booths or rooms should be thoroughly cleaned at least once a day and fans, ducts, side walls and ceilings kept as clean as practicable at all times. Fibre brooms or brass or bronze implements should be used for this purpose in order to avoid the creation of sparks. Where practicable surfaces to be cleaned should be sprayed or otherwise wet down with water before cleaning.

"Three methods are in use for facilitating cleaning interior of spray booths as follows:

(a) A heavy coating of plaster of paris or whiting.
(b) Walls and roof covered with a heavy coating of vaseline or cup grease over which is usually applied heavy manila paper.
(c) Interior blown down daily with compressed air while ventilating system is operating.

"Scrapings should be placed in covered metal receptacles and immediately disposed of. As combustible dust can be ignited by friction or sparks, it is important that the floor of the booth including turntable, turntable track and rollers should be kept clean, even though it necessitates sweeping and removal several times during the day.

"Employees must not be allowed to enter stacks or ducts for cleaning until stacks or ducts are entirely free from flammable vapors and are thoroughly wet down for their entire length.

"Spray booths used in connection with the application of pyroxylin finishes should be used for no other purpose. If this precaution is not observed, serious results will likely occur for the reason that alternating deposits of pyroxylin materials, varnish, oil base stains, ground coats, etc., make probable spontaneous heating and eventual ignition."

Good Housekeeping Essential

Good housekeeping, in other words, cleanliness, eliminates this hazard just the same as the proper care of oily or paint and varnish saturated rags and waste eliminates or safeguards the spontaneous combustion hazard with oil finishes. In any manufacturing plant, regardless of occupancy, the importance of good housekeeping cannot be over-estimated.

I have not touched upon the safeguarding of so-called "common hazards" which are accentuated when in the presence of inflammable compounds or vapors. These are all adequately covered in the National Fire Protection Association suggestions covering the use of pyroxylin finishes. They should be carefully analyzed and closely followed. Your attention is called to Part 1 which covers the large manufacturing plants, and Part 2, which applies to refinishing shops where automobiles, furniture and similar articles are finished or coated on a smaller scale.

Keep in mind that in general the National Fire Protection Association Pamphlet, "Pyroxylin Finishes," which has been referred to a number of times, applies in all essential details to the spraying of enamels, paint and varnish compounds.

I believe you will all be interested in a pamphlet published by the duPont Company entitled "Precautions in the Use of Duco"; copies of this are available for all who desire them. It sets forth in greater detail some of the specific hazards as regards this particular compound and also contains the National Fire Protection Association's suggestions which have already been brought to your attention.

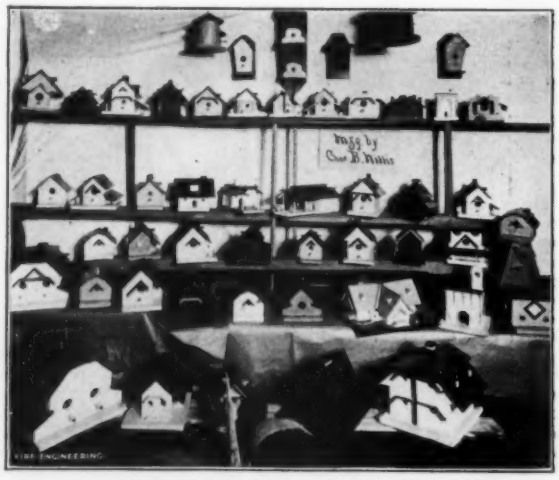
Losses Comparatively Small

While in Detroit about two weeks ago, I asked the head of the fire Protection Department of the Fisher Body Corporation, who are unquestionably the largest users of pyroxylin finishes in the world, what their experience with this class of finishes had been from a fire hazard standpoint. Their present capacity, taking into consideration individual spray booths and their spraying tunnels, approximates five hundred spray booths in which they have finished nearly a million and a half automobile bodies. They first began using pyroxylin finish about three years ago. During this period they have had seven fires in their spray booths and tunnels involving pyroxylin finish or thinner. The total fire loss has only amounted to $2,300.

The first fire in a spraying tunnel was caused by a plumber pouring hot lead around a sewer drain. Another fire resulted from a short circuit while the electricians were removing a switch and fuse box in a tunnel; the short circuit ignited vapors from an open can of thinner which was directly underneath. Two fires are thought to have been due to hot fan bearings. Two of the fires resulted from sparks caused by metal passing through fans. The cause of one fire is unknown, but it is thought to have resulted from smoking. Of these seven fires, only one claim of loss was made. In contrast with this, they have recently experienced two fires in varnish spray booths—one of which entailed a loss of about $8,000.00.

At the present time there are approximately 2,000 refinishing shops in the United States using Duco and as far as we have been able to ascertain not a fire has occurred due to the use of such a pyroxylin finish or its thinner, and needless to say, conditions in many of the refinishing shops are far from what might be considered satisfactory from a fire hazard standpoint.

The fire record is a more or less true measure of the hazard involved and thus far the record would appear to indicate that with reasonable safeguards pyroxylin finishes can be used with no more danger than has been experienced with the older types of oil compounds.



Fireman Finds Time for Pet Hobby

The collection of bird houses shown above was made in spare moments by Captain Charles B. Willis, of Pueblo, Cal. Many of the designs are novel and interesting. The birds about Pueblo will have their home building problem solved, that is, if they are fortunate enough to locate one of these bird houses.

Results Announced for Chicago Pension Drive—Fire Commissioner Connery of Chicago announced that $131,500 had been collected for the relief and pension fund of the fire department.

Kempton, Pa., Dedicates New Fire Station—A new $30,000 fire station has been dedicated in Kempton, Pa. The building is two stories high and is constructed of brick.

San Francisco to Purchase Apparatus—San Francisco, Cal., will soon purchase fire apparatus costing about $90,000—the order will consist of new towers, pumpers and chemical apparatus. The money for the purchase has been provided in the new city budget.

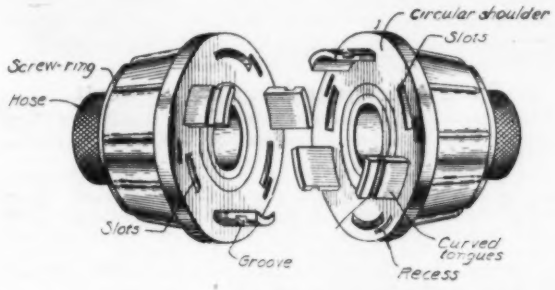
Recent Patents

Descriptions of Patents Recently Issued of Interest to Fire Departments—Fire Hose Coupling—Siren and Means for Operating

Fire Hose Coupling

A new design for a fire hose coupling has been patented (No. 1,584,278) by Zotique Dessaints of Riviere Du Loup En Bas, Quebec, Canada. The main object of this design is to provide a simple construction for making a quick and water tight joint which is automatically locked against accidental release or uncoupling.

The illustration shows a perspective view of the coupling. The device consists of a pair of complementary members each



being the counterpart of the other, and adapted for application to the end of the hose to be joined. Since the two members are identical in construction, only one of them need be described.

The member consists of a cylindrical sleeve or body fixedly secured around the hose. The body is held firmly on the end by means of ribs projecting from the body into the tubular member.

At the joining end of the member is formed an integral circular shoulder from which projects a plurality of curved tongues. Each tongue has a groove in its back. Between the tongues are formed slots adapted to receive the tongues of the counterpart members.

On the outer or remaining end of the body is threaded a screw ring which is rabetted at its outer circumference as indicated. The body or sleeve is surrounded by a rotating collar one end of which is received in the groove while the other end rides over the back of the shoulder and is formed with notches.

A number of tapered keys project inwardly from the collar in such a manner as to be received in the grooves of the tongues projecting from the complementary member. The shoulder is also formed with recesses in each of which is also piveted a pawl normally pressed into engagement with the adjacent notched face by means of a spring leaf. The ring and collar carry screw eyes respectively to which are attached the ends of a coil spring around the body.

In assembling the joint, assuming that the two members are separated, the collars are first turned slightly against tension of the springs. The grooved tongues are now slipped into the complementary slots and the collars are released. The springs turn the collars to their normal position and at the same time wedge the keys into the grooves thereby locking the two members together. Also, the pawls lock against the notched faces and thus prevent any accidental shifting of the collars which might release the keys from the slots of the tongues. In separating the joint, a tool is driven into the space between the shoulders in order simultaneously to turn the pawls and thus release them from the notches. The collars are now free to be turned until the keys are released from the slots.

Siren and Means for Operating

A novel means for operating a siren has been patented (No. 1,586,101) by Lester H. Miles of Los Angeles, Cal. The object of this design is to provide a means whereby a siren may be operated from the periphery of the fan of a gasoline engine.

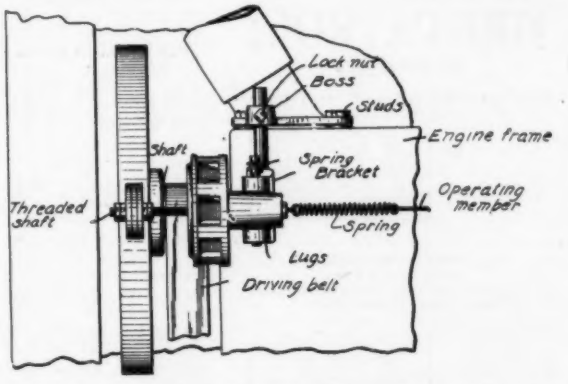
The illustrations show a portion of the engine cut away to clearly present the arrangement of this device. The engine frame provides a support for a shaft on which the hub of a fan is mounted. This fan is provided with radial vanes on which a peripheral rim is arranged. The shaft has a pulley which receives a driving belt for driving the fan. Mounted on the frame is a supporting plate which has a pair of apertures therein to receive fastening studs whereby it may be bolted to the frame.

The supporting plate is provided with a projecting boss to receive a post. The post may be held in adjusted position to receive a lock nut.

The siren consists of a stator and a rotor. The stator is provided with a lug. The post has a bracket thereon which is spaced lugs so arranged that the space between the lugs is designed to receive the shaft which is pinned to the lug and which is free to move in the apertures.

A spring surrounds the shaft and is fixed to this shaft. This spring has one end fitted in a recess in one of the lugs and the construction is such that normally the spring tends to turn the stator in one direction.

The siren rotor includes a projecting threaded shaft which has a driving disc thereon. This disc may be made of fibrous material and is arranged between adjustable lock nuts so that it can be moved back and forth. The projecting portion is so



positioned that the disc will be in engagement with the rim of the fan when the siren is in operating position.

In order to move the siren, a connection is provided which is attached to a spring that is in turn attached to an operating member.

The construction is such that normally the spring holds the siren with the disc out of engagement with the rim. When the operating member is pulled, the siren will swing about the shaft against the tension of the spring and will bring the disc against the rim to cause the siren to rotate. By having the spring connected to the operating member, all shock is absorbed and the strain is removed.

Fire Line Passes Handicap N. Y. F. D.

The 8,500 scarlet red fire line admission cards are in danger in New York City. They were issued by former Commissioner Drennan over the period of eight years that he was Fire Commissioner. The new Commissioner, Mr. John J. Dorman, is preparing to recall the pasteboards and reissue substitutes containing his own name and authorization, but in more limited numbers.

Last week at a four alarm fire in a chemical and drug house in John street, Chief Kenlon became so annoyed by the presence of multitudinous fire line card holders, that he ordered the police to seize and confiscate the cards. The fire happened to be in the heart of the insurance district, where clerks, stenographers, messengers, and in fact a variety of fire insurance company employees were armed with red cards and for no apparent reason at all, decided to not alone attend the fire, but actually get in the way of the firemen and even idly stand about staring Kenlon in the face while he was busy directing one of the toughest fights he has had on his hands for some time.

Commissioner Dorman says the new issue of Fire Line card will not be so extensive as his predecessor made it. The police Commissioner, Mr. George V. McLaughlin, is working tooth and nail with Commissioner Dorman on the problem of restricting the size of privileged assemblages at all fires in New York.

W. J. DALY.

Muskegon, Mich., Firemen Want Increase—The firemen of Muskegon, Mich., have made a request to the city council that they be granted a twenty per cent increase in their salary. If this request is granted, the men will receive from $1,440 to $1,960 a year instead of the $1,200 to $1,600 they now receive.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

Funds Raised for Company Work

The problem of raising funds for the maintenance of a fire company has been solved by the Nyack Fire Patrol of Nyack, N. Y. The fire company owns several lots which they have converted into parking space.

Nyack, N. Y., Auto Park Tag

Automobilists on their way to the local theatres drive their cars to the parking space where they are charged twenty-five cents for the privilege of having their car guarded. On the reverse side of the tag which is tied to the car, is advertising space which is sold to the merchants of the town. This all goes into one common treasury to augment the fund.

This plan has more than paid for the operation of the patrol, which is not supported by the town or other interests. The auto park charge has been the material means of making the corps financially independent and it has provided a good surplus.

The members of the patrol urge all departments who are situated similarly to their department, to try out the described plan. It abolishes the necessity of appearing before the town council for appropriations to purchase many of the small incidentals necessary for the efficiency of the department.

Larchmont, N. Y., Claims Low Loss Record

In connection with the annual report of the Larchmont, N. Y., fire department submitted by Chief George S. Towle, a claim has been made that this municipality has an almost one hundred per cent prevention record. The chief states that the town is assessed for twenty million dollars, nearly half of which is in building and contents. The fire loss is less than $600 for this year and is $1,600 for last year; it is believed that this establishes an United States record.

Response to Outside Alarms

There is very acute feeling between the municipalities of Grand View, just outside of Nyack, N. Y., and Nyack, concerning the matter of response of the fire department to the former place. While there is not a written agreement between the two places, Nyack had supplied fire protection to that place in appreciation for the trading done in Nyack by Grand View which is a residential district. Grand View depended for years upon Nyack for fire protection and did not reimburse the taxpayers there for the wear and tear of the apparatus and equipment belonging to the Nyack fire department.

This unofficial arrangement which was in operation for many years was suddenly broken when it was claimed that an official of Grand View insulted officers of the Nyack fire department upon the occasion of a recent call. As a retaliatory move, Nyack firemen refused to answer calls from the village.

As a result of the new plan, one of the homes in Grand View was destroyed with a loss of $9,000, and according to one of the local insurance men, there is a probability that the insurance rates in the village will be doubled.

Fire was discovered in the second floor of the stated residence by some of the guests of a party in a home nearby. The women rushed to the burning building and assisted in carrying out some of the furnishings of the lower floors. It was impossible to reach the second floor because of the intense heat of the flames. Calls for fire companies were sent to Nyack and Piermont but the Nyack firemen refused to respond. It is felt that if the Nyack companies had responded, the flames would have been checked with very little loss. The Piermont company was hampered by the lack of equipment.

The owner of the home when he arrived from business was overcome at the loss and stated that he would make a complete investigation in the matter of the assistance that was refused by Nyack.

N. Y. Firemen Meet at Endicott

The thirty-third annual convention of the Central New York Volunteer Firemen's Association was held in Endicott, N. Y., on July 21 and 22.

The feature addresses at the opening of the convention was made by Daniel H. Shire, chief of the fire department at the Rock Island Arsenal, Rock Island, Ill. He explained the merits of the theory of ventilation of buildings. An inspection was made of all the fire houses in the vicinity. Capt. J. J. Conway of Cincinnati, Ohio who was scheduled to speak on "Fire Prevention" failed to appear.

More than two thousand firemen were in the march that closed the convention of the second day.

The following were chosen as officers for the coming year; president, Millwood Fitch, former secretary, of Moravia; first vice president, Judge Clarence W. McCray, of Waverly; second vice president, John J. Gleason of Geneva; secretary, Thomas F. Murray of Cortland; treasurer, Dr. Julian Smith of Endicott. Millwood Fitch was named as delegate to the state convention to be held at Alexandria Bay in August.

The choice of the meeting place for 1927 was left to the executive committee because only one place was named by the delegates. The committee meets in December and the result will be announced at that time.

Large Annual Fire Loss Reported

In connection with the sixtieth annual meeting of the National Board of Fire Underwriters held at the Waldorf, New York City, the annual fire loss for 1925 was announced at $570,225,921. The figures were based on the reports furnished by 213 fire insurance companies, and this loss is $34,853,139 higher than that of last year. The president of the board stated that the large increase of fire losses was taken care of in insurance payments by the fact that the losses occurred during a period of sharply rising security prices.

The rise in crime conditions was attributed for the increasing moral hazard in fire insurance risk. Profesor Willis spoke on the "Relation of Earthquakes to Insurance." He said that while there is a distinct earthquake fault in the earth about Hollywood, Cal., there is also one in the vicinity of New York commencing above Staten Island and extending up the Hudson river to Lake Champlain and the St. Lawrence river.

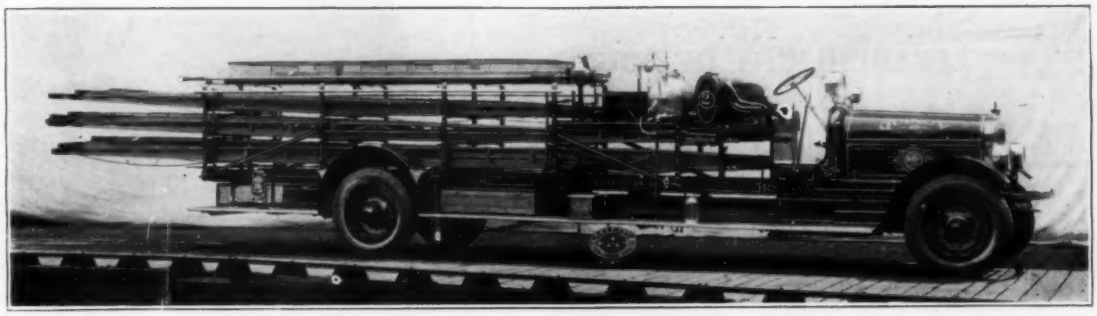
The National Board of Fire Underwriters have issued printed reports of the year's activities of the Committee on Fire Prevention and Engineering Standards, reports of the executive committee, actuarial bureau committee, committee on adjustments, committee on finance, comittee on incendiarism and arson, committee on laws, committee on membership, and a report on the committee on public relations.

The work on the standardization of fire hose has been carried out so that at the last report, 1,700 cities in the United States have rechased their threads to conform to the National Standard.

American Legion Forms Fire Department—The American Legion post at Harlem, Mont., has formed a fire department.

Lyons, Mich., Purchases Apparatus—The village of Lyons, Mich., and 118 farmers in the vicinity of that place, cooperated in the purchase of a pumper with chemical tanks.

New Fire Station for Palm Beach, Fla.—A new fire station that will cost $100,000 will be erected in the northern section of Palm Beach, Fla. It is intended that two companies will be housed in the new building.



The Seagrave Aerial Ladder Truck

Always rises to the occasion

The operator is up on the operating platform out of the way of twisting hose lines, passing trucks and busy firemen.

The hoisting device is positive and simple in operation. It is not dependent upon complicated valves or mechanism.

The horse power of the motor is capable of negotiating the most difficult situations with it's heavy load.

The ladders are SEAGRAVE LADDERS the recognized standard throughout the United States and Canada and are the products of years of experience.

All stunt performing schemes are entirely eliminated. Safety, simplicity and strength are the foundation of its construction and the object of its builders.

SEAGRAVE
BRANCHES

Boston, Mass.
Philadelphia, Pa.
Los Angeles, Calif.
New Haven, Conn.
Chicago, Ill.
Kansas City, Mo.
Birmingham, Ala.
Dallas, Texas.
Pittsburg, Pa.
Seattle, Wash.
San Francisco, Calif.

The SEAGRAVE *Corporation*

Columbus, Ohio

SIRACODE

THE
SEARCHLIGHT OF SOUND

Copyright.

EVOLUTION IN SIRENS

A few additional advantages to be obtained only in SIRACODE are herewith cited, which, added to their great superiority and unequaled efficiency, compared with ALL old-type sirens, place them in a class by themselves, for those who only desire the LATEST AND BEST:

Patents Pending

Front View
Model D8 "Junior"
6-12-24-32 Volts.

(1) SPECIALLY CONSTRUCTED MOTORS, CONSUMING ABOUT **ONE-THIRD** THE USUAL AMPERAGE, ELIMINATING THE PRESENT DRAIN ON BATTERIES.
(2) ABSENCE OF SPARKING, DOING AWAY WITH USUAL BRUSH TROUBLE.
(3) PATENTED ALLOYED METAL, LIGHT AS ALUMINUM, YET IMPERVIOUS TO THE ACTION OF WATER OR MOISTURE.

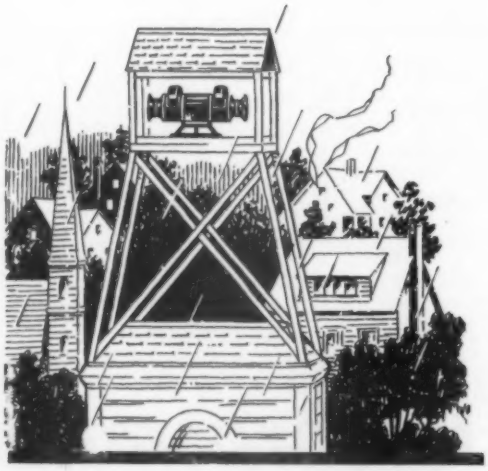
APPARATUS TYPES
JUNIOR (6 or 12 Volts)..$90.00
JUNIOR (24 or 32 Volts)..$95.00
MIDGET (6 or 12 Volts) $45.00
F. O. B. San Francisco.

Write for full particulars regarding our recently perfected SIRACODE SYSTEM for protection of towns, communities and industrial plants. Nothing else like it on the market.

SIRACODE SIGNAL CORPORATION

Formerly Heath Engineering Laboratories, 354 Pine St., San Francisco, Calif.

The Great Sterling Electric Siren



For quick action—for dependability—nothing can equal the great Model M Sterling Electric Fire Siren.

Adequate protection for your town cannot be had with the old-fashioned bell and whistle signals. The Sterling Electric Siren is the modern and accepted signal. Its shriek and deep roar is heard for miles and can never be mistaken for other sounds. IT COMMANDS IMMEDIATE ACTION!

Write for particulars and terms of purchase.

Sterling Siren Fire Alarm Company Inc.

61 Allen Street - - - Rochester, N. Y.

FIRE DEPARTMENT ACTIVITIES

Richfield Springs, N. Y., Purchases Apparatus.—A Mack fire apparatus was purchased by Richfield Springs, N. Y.

New Apparatus at Valley Junction, Ia.—A new fire apparatus built on a Reo chassis has been placed in service at Valley Junction, Ia.

Victor, Ia., Acquires Apparatus.—An International Harvester Company truck equipped with a Northern pump has been delivered to Victor, La.

Ellenville, N. Y., Tests New Pumper.—A Sanford triple-combination pumper recently delivered to Ellenville, N. Y., has successfully passed the Underwriters' test.

Bids Asked for Riverside, Cal., Station.—Bids were invited for the construction of a fire station in Riverside, Cal. It is estimated that the station will cost $10,000.

Plans Being Made for Minnesota Convention—Plans are being made for the convention of the firemen of Cottonwood County, Minnesota, which will be held in Windom on August 18.

Harrisonville, Mo., Receives New Apparatus.—A fire apparatus mounted on a Reo chassis and built by the General Manufacturing Company of St. Louis, has been delivered to Harrisonville, Mo.

Fire Company Restored in Madisonville, O.—Engine Company No. 49 has been reopened in Madisonville, O., and six veteran firemen have been assigned to the company. The district is on the outside of Cincinnati.

Capac, Mich., Purchases Fire Apparatus.—The department at Capac, Mich., has purchased a piece of fire apparatus from Highland Park, Mich., when the latter city decided to standardize their equipment.

Clarinda, Ia., Purchases More Apparatus.—Two new pumpers each of 350-gallon captcity and equipped with a booster tank, have been purchased by Clarinda, Ia. The purchase has been financed by popular subscriptions.

Petition for Long Beach, Cal., Wage Increase.—A petition is being circulated in Long Beach, Cal., for the increase in the salary of the firemen. An average increase of $25 is asked.

Many Companies Submit Bids to Troy, N. Y.—Fourteen manufacturers of fire apparatus submitted bids for supplying fire apparatus to Troy, N. Y. The bids were referred to Robert J. Murray, general manager, for tabulation.

Valona, Cal., Wants Fire Protection District.—A petition has been filed with the supervisors for the establishment of three fire protection districts in Valona, Tenney Terrace near Crockett, and in San Pablo.

New York has Few Holiday Fires.—According to a compilation of figures of the fire alarm bureau, Commissioner Dorman announced that between July 4 and 5, 378 alarms of fire were received. Of this number, 88 were caused by fireworks but none of the fires were of serious consequence.

Johnstown, N. Y., Opens Central Fire Station.—The new central fire station in Johnstown, N. Y., was recently opened. The firemen from Station 2 moved into their new quarters. The fire department will be centralized as there are now only two fire stations.

Windsor, Conn., Purchases Pumper—Windsor, Conn., has purchased a Seagrave 750-gallon pumper, and delivery is expected the early part of this month. The purchase of the pumper ends a long campaign started by the firemen for the purchase of modern apparatus.

Sea Cliff, L. I., Firemen Called to Put Out Cop.—The volunteer firemen of Sea Cliff, L. I., N. Y., were called to put out a "cop." The cop was of the silent variety and caught fire when some automobilist in trying to round the traffic signal, crashed into it.

Omaha, Neb., Firemen Want Increase in Pay.—The firemen of Omaha, Neb., are asking for an increase in their pay. Some time in 1925 the men asked for an increase of $25 a month and were granted a raise of $10 a month; they are now asking for the balance they say was promised them in accordance with a verbal agreement.

Albany, Ore., Firemen to Strike—When Chief Russell Knighten of Albany, Ore., was dismissed and another appointed for the position, the firemen of the department voted to resign from the service. The mayor stated that he failed to obtain the cooperation of the chief in making a study of the local fire hazards in the business district.

Whittier, Cal., to Have Paid Department—Although the fire department of Whittier, Cal., has been operating as a paid unit for some time, it was only recently that an ordinance has been introduced to make the paid department a permanent feature. The new law provides for the appointment of the chief by a board, and the chief is empowered to appoint other members of the department.

Bergenfield, N. J., Firemen Killed.—While on their way to the Elks Club to receive a loving cup in appreciation of their work, the volunteer firemen of Bergenfield, N. J., responding on their apparatus were struck by a freight train. Nineteen of the men who clung to the machine escaped with minor injuries but one of the men who had jumped, rolled under the apparatus and was killed.

Fire Station Completed in Napa, Cal.—A new combined fire station and quarters for the chief have been completed in Napa, Cal. The building is of Spanish architecture with the east side of the station used for the firemen's quarters. They consist of a living room, kitchen, dormitory and bathroom. The chief's quarters on the other side, consist of a living living room, bedroom, kitchen, bathroom and a large back porch.

Illinois Firemen Must be Fifty to Get Pension.—Attorney General Oscar Carlstrom rendered an opinion that in order for a fireman to obtain the benefits of a pension, he must be at least fifty years of age. The question was brought up when a member of the Peoria department who had served for twenty-five years wished to retire on a pension, but who had not reached his fiftieth birthday. In addition to length of service, one of the requirements for a pension is the age regulation.

Cleveland, O., Firemen May Wash Bedding.—The city firemen of Cleveland, Ohio, will have to wash their own bedding if the safety director has his way of doing things. He suggested that a washing machine be furnished each of the stations and that everything be done to make the "bums" work. The proposal was the result of Assistant Chief Granger asking that the men be permitted to work forty-eight hours and be off forty-eight hours instead of the twenty-four hours at present.

Denver, Col., to Have Boy Contest.—In connection with the staging of the "Burning of Denver," in August, a contest is being conducted among the boys of the city to construct the best home made fire apparatus. The winner of the contest will receive a gold medal from the mayor, and will have an opportunity to ride with Chief Healy when the large fire battle takes place. The company that is second in the contest will receive a silver medal, and the boy-firemen will have an opportunity to ride on one of the city fire trucks. Each constructed apparatus must have its compliment of five company members.

Fire Alarm Notes

Tacoma, Wash., Wants New Fire Alarm System—The Gamewell Fire Alarm Company have been asked to prepare an estimate as to the cost of installing a new fire alarm system in Tacoma, Wash. It is believed that it is costing the city about $20,000 in increased insurance premiums because of the lack of modern fire alarm system.

Warning Sirens Installed in Mobile, Ala.—Along the principal streets of Mobile, Ala., the city has installed sirens to notify the motorists of the approach of fire apparatus. Once the sirens commence operating, the alarm is maintained for about five minutes. The motorists on hearing the siren are supposed to pull up to the nearest curb and wait five minutes.

Many Sales of Sterling Sirens Reported—Sterling code sirens operated from street boxes have been installed and accepted by Eastwood, N. Y., Windham, N. Y., Pine Bush, N. Y., Wind Gap, Pa., Red Lion, Pa., Lakewood, R. I., Brookfield, Ill., and Rayne, La. Most of the systems range from four to twenty-four boxes which operate the siren and blowing code numbers.

Course in Fire Protection

(*Continued from page 773*)

Then we protect window openings with approved fire windows and we protect windows and wooden walls with open sprinklers, which protection saves many buildings. But all these things for protection against exposure are more or less ineffective. Some are only of use in getting the insurance rate. When the property burns it goes just the same and the protection costs the owner money for which he gets little return. He had better go outside the town and get plenty of land to have room enough. Of course a direct charge for the exposure comes in in the insurance cost. There must be a rate for that exposure, otherwise we would be unfair to the property which had no exposure. The state laws will not let us charge one man the same as another when the hazard is different.

The Factor of Restrictions

Owners and architects could well pay more attention in the cities also to the matter of restriction. Unfortunately in this free country we can build a fire-proof $50,000 house and a man may build a lumber yard or a saw mill ten feet away. We do not have any way of stopping that evil unless there are restrictions in the city code and that is becoming more and more a factor of importance.

Probable the city of Detroit has been one of the notoriously bad examples, with beautiful boulevards and no restrictions, so the boulevards contain $50,000 dwellings and factories and stores, all mixed up. Building was not regulated originally, although I think it is now.

In selecting sites and putting up property it is advisable to get in a restricted location, if one can. The building codes of the towns and cities directly affect this matter of exposure and can safeguard property owners a good deal if properly enforced, but even a vigilance committee or chamber of commerce or the Kiwanis or other organizations in the town, by moral persuasion. can do a good deal with the building conditions where the town is smaller.

Then, of course, the locations which have notoriously bad reputations are another factor in the exposure. Some parts of your town, as your fire chiefs know, call you out much oftener than other parts of the town. Property owners very often buy a piece of land because it is cheap and put up a valuable piece of property in such a location without taking account of the fact that their building may be destroyed by its neighbors.

I have seen good prosperous industries absolutely destroyed by fire. Although we paid the fire insurance, before they could get going again some competitor had their business, so continuity of production is very important for any industry.

Necessity of Ample Sized Water Mains

Another thing we find often is that valuable property will be put where there are no water mains. The owner might think and it might be perfectly true that there is a very good fire department in town. Perhaps the water company or the town has not spent money on the water mains, and some fire plugs are rented for $50 a year to the town but are located only on a three or four inch main. The fire chief is helpless for lack of water and gets criticized for not putting the fire out. There is nothing like good cold water to put out a fire, but you cannot do it with two, three and four inch mains, as found in many towns.

Then of course the danger of exposure is also modified a good deal by the quality of the police and fire departments and such things should receive attention of owners building property.

Don't Locate in High Insurance District

Then the last item is that there are certain districts in certain towns which carry a higher insurance charge than other parts of the town. The property owner should consider that in putting up property because such a rate will be a perpetual charge upon him. Take the lumber district in Memphis, Tennessee, for example,—a couple of miles of lumber yards and saw mills. Insurance men simply have to consider that district mostly as one fire from one to two miles long. Had these plants been separated a bit they would enjoy quite a little less insurance cost. All such things add to the items of expense and are factors when considering exposure.

I recall a good sprinkled candy factory built in a certain town. The owner did not buy a large lot and five feet distant was a four story manufacturing building which helped to keep the fire department exercised. I think they were called down there for a fire on an average once a month. So the owner of the candy factory got practically no benefit from his nice building because of the bad neighbor. He was unfortunate in selecting the location.

(*To be continued*)

Ft. Dodge Men Use Drill Tower

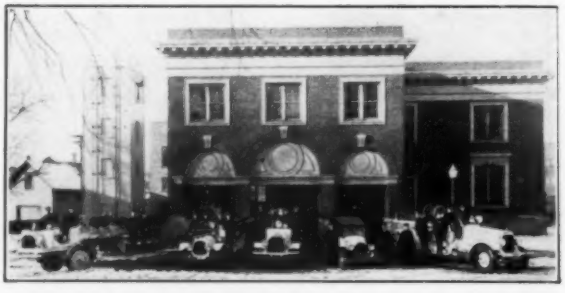
The firemen of Fort Dodge, Ia., under the leadership of Chief H. J. Callahan, are trained in fire department evolutions at the drill tower constructed at the rear of the central station.

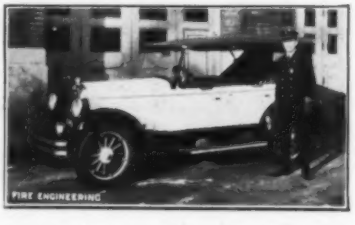
The tower which is four stories high, was constructed last fall in accordance with a recommendation made by the National Board of Fire Underwriters. Chief Callahan and the building commissioner co-operated in the drafting of the plans for the tower. The department feels that the construction cost was small in comparison with the reduced insurance rate.

Each story of the tower has a room sixteen feet square, and there is a balcony on the top of the structure. The rooms on the first two floors are air tight to give the men practice in entering a smoke filled room. A platform on one side is pierced for practice in extinguishing basement fires. Fire escapes, standpipes, and inside stairways are also provided.

Drills are held several times each week, and the men are trained in the twelve evolutions of the department. The daily drill is confined to one evolution.

Because of the large number of fires caused by sparks on shingle roofs, Chief Callahan in his annual report recommends that an ordinance be passed that will prohibit the construction of shingle or other flammable roofs. The hazards caused by the parking of automobiles in the narrow streets of the city has been mentioned in the report. The chief recommends that legislation be passed to the effect that cars be parked parallel to the curb, or else diagonal parking on one side of the street.





Upper — Central Fire Station of Fort Dodge, Ia., showing the drill tower at the left, and to the rear of the station. Lower —Chief H. J. Callahan in front of the car with which he responds to fires.

The department at Fort Dodge is ever working to reduce the city's fire losses and to train the men to better efficiency.

Canada Has 183 Hose Threads

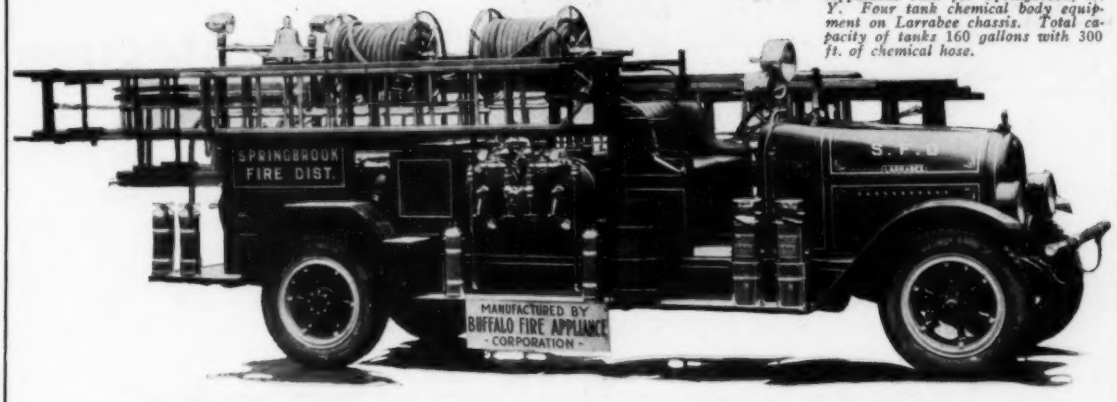
The chaotic condition in the size of hose threads in Canada was brought out at a meeting of the Association of Canada Fire Marshals in Ottawa. A survey revealed that there were 183 different sizes of hose threads varying from four to eight threads per inch. Some of the fire departments carry twenty or more adapters as part of their equipment to enable them to hook up with outside hydrants.

The fire loss in Canada in 1925 was $40,712,172. This is equivalent to a per capita loss of $4.89. It is said that in England a per capita loss of 83 cents has caused great concern over the mounting fire losses but no one gives the problem a thought in Canada. A lumber yard fire which caused $1,400,000 damage was the largest fire of the year. During the past year there were 374 deaths from fire and 1,713 people were injured as the result of fire.

Henry H. McLellan, provincial fire marshal of New Brunswick, was elected president of the association. P. J. Jobin, provincial fire marshal of Quebec, was elected vice-president and J. Grove Smith, Dominion fire commissioner, Ottawa, secretary-treasurer. A plan was advocated for the establishment of loss information bureaus as a means of obtaining the fullest measure of co-operation between fire marshals and underwriters.

Watervliet, N. Y., Awaits New Apparatus—The firemen of Watervliet, N. Y., are awaiting the delivery of six new pieces of fire apparatus which have been promised for October 1.

BUFFALO



Apparatus built for Springbrook, N. Y. Four tank chemical body equipment on Larrabee chassis. Total capacity of tanks 160 gallons with 300 ft. of chemical hose.

Small Towns, Suburban and Rural Communities Turn to Buffalo for Their Fire Apparatus

When in the market for new equipment it will pay to bear in mind that we are doing more and more business with small towns, suburban and rural communities that require special built-to-order dependable equipment at a moderate initial cost with freedom from high repair and maintenance charges.

We are especially qualified for a number of reasons to provide apparatus of this type. Buffalo apparatus is designed by experienced fire apparatus engineers in conjunction with local fire officials to meet the particular needs of the town or community making the purchase. Every piece of apparatus is fully guaranteed. A standard commercial chassis is selected for the body equipment required. This provides dependability together with convenient and economical service facilities and reduces the cost of the apparatus.

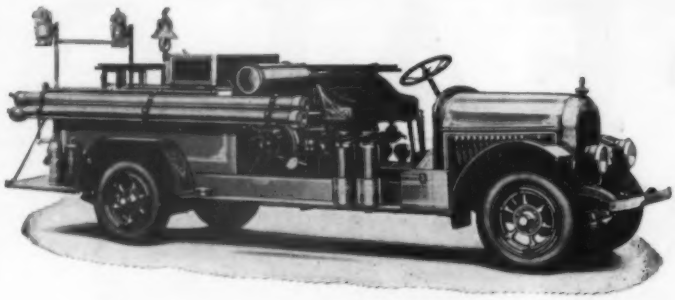
It is significant that Buffalo apparatus is making-good and making friends wherever placed in service. Buffalo apparatus is built by skilled workmen in a new modern manufacturing plant of the finest materials money can buy. You get high-grade equipment when you order Buffalo apparatus.

Do You Want Complete Information on Our Way of Doing Business?

BUFFALO FIRE APPLIANCE CORP.

Main Office and Factory, Buffalo, N. Y.

BUFFALO



COSMOPOLITAN

means

Fire Protection

The Cosmopolitan is a low-hung, powerful fire fighter with a six cylinder motor possessing speed, power and rapid acceleration.

It is equipped with the American-LaFrance rotary gear pump, famous for its remarkable adaptability to fire duty.

This dependable fire fighter has back of it the engineering experience of the American-LaFrance Fire Engine Company. It is especially designed for communities requiring dependable fire protection at a moderate initial investment and a low maintenance cost.

AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

ELMIRA, N. Y.

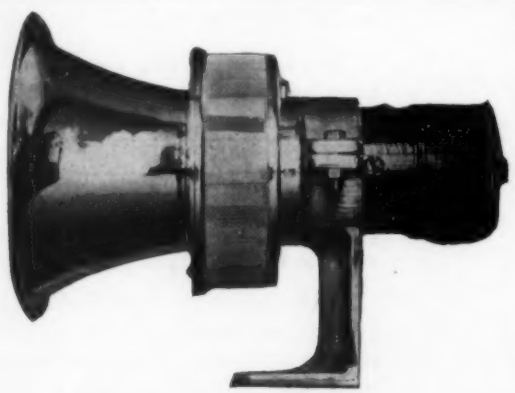
Branches: New York, Boston, Atlanta, Pittsburgh, Chicago, Dallas

Canadian Factory: Toronto, Ont.

Branches: Philadelphia, Baltimore, Denver, San Francisco, Minneapolis, Kansas City, Mo, Los Angeles, Portland

C.A.M. Sirens

are better sirens



They are designed solely for emergency signalling and are unsurpassed for ruggedness of construction, simplicity and accessibility of parts.

They are built to give service and to endure.

Bronze is used where bronze serves best; likewise with other metals.

C. A. M. Sirens may well be classed as aristocrats in the siren field. They are "quality" sirens.

If you are in the market for the best that can be built in the way of electric fire apparatus sirens, get in touch with us. Write for bulletins.

C. A. M. Manufacturing Company

802 Humboldt Bank Building San Francisco, California

Fires of the Week

(*Continued from page 780*)

YORK, PA.—Plant of International Chain Company damaged.. 100
HAUNTOWN, IOWA.—William Struve's flour mill destroyed.. 60
KEIGHLEY, KAN.—Building and yards of Rock Island Lumber Company, also hotel, destroyed..... 40
GRAND RAPIDS, MICH.—Lumber storehouse of Stow & Davis Furniture Company damaged..... 25
NEW YORK, N. Y.—Building at 108-110 John Street destroyed 100
OPPORTUNITY, WASH.—Canning and cold storage plant of E. H. Stanton..... 100
ELLENSBURG, WASH.—Ellensburg Milling Company property destroyed 80
EAST BURNABY, B. C.—Endot stock feeding plant destroyed. 40
LOGANSPORT, IND.—Fernald saw mill destroyed..... 25
ANN ARBOR, MICH.—Home and farm building of Henry Forshee 35
WAMPUM, PA.—Plant of Lastik Products Company destroyed. 60
MITCHELL, S. D.—Four business establishments damaged.. 80
CONWAY, ARK.—Conway Compress Company and adjoining property 250
SHINNECOCK, N. Y.—Shinnecock Casino destroyed..... 60
FULTON, N. Y.—Hunter Fan & Motor Company plant destroyed. 135
WILLIAMSON, W. VA.—Eight residences destroyed..... 50
TENNYSON, IND.—Thirteen frame business houses and six residences destroyed 50
MARIA STEIN, OHIO.— Joseph Goeke tile mill destroyed.... 40
MONTGOMERY, ALA.—The Strand Theatre damaged..... 25
SILVERTON, B. C.—Ore mill of Standard Lead Mining Company destroyed 120
BOGOLUSA, GA.—Property of Great Southern Lumber Company destroyed 600
MARYVILLE, MO.—Three buildings on farm of M. Calahan destroyed 25
ST. LOUIS, MO.—Business establishments—8817-21 W. Florissant Ave. 65
HOLGATE, OHIO.—Elevator destroyed, owned by Peter Hipp and Claude Shockey..... 35
LUZERNE, PENNA.—Freedman block damaged..... 65
WINFIELD, KAN.—Science building of Southwestern College damaged 25
FORT EDWARD, N. Y.—Buildings on farm of J. P. O'Brien destroyed 25
BLACKLICK, PA.—Store of D. A. Palmer and five dwellings destroyed 40
BLAINE, WASH.—Morrison Mill Company plant damaged.... 25
COUNCIL BLUFFS, IOWA.—Plant of Monarch Manufacturing
MARYSVILLE, CALIF.—National Theatre and surrounding property 290
Company damaged 400
JACKSONVILLE, FLA.—Oceanview Hotel and baths at Jacksonville Beach, 18 miles east, destroyed..... 80
MOBERLY, B. C.—Camp No. 5 of Columbia River Lumber Company 165
STEAMBOAT ROCK, IOWA.—Seven business establishments destroyed 25
SAGINAW, MICH.—Store of Beach & Davis clothiers..... 130
JEROME, ARIZ.—Fourteen residences destroyed..... 40
ELLISTON, MONT.—Several business establishments and residences 25

Summer Hotel Fire Legislation Delayed

The Legislature of the State of New York has adjourned for the summer recess without giving consideration to a bill introduced by Senator Benjamin Antin of New York City, which had for its object a Legislative investigation of the fire-protection, or lack of fire-protection in the summer hotels of upper New York State.

Mr. Antin's bill was provoked by the fact that a fire in the Prairie House, a mountain resort in Hurleyville, Sullivan County last February, cost ten lives, most of them residents of Senator Antin's district in Bronx County.

The bill proposed that the State appropriate $5,000 with which to conduct the investigation. The Senator has publicly charged that the lobby maintained by the owners of the summer resort hotels and boarding houses succeeded in defeating the bill.

In seeking consideration of his bill in the closing hours of the session, Mr. Antin asked the unanimous consent which was objected to by Senator Knight (Rep.) the Majority Leader. This objection blocked whatever chance the bill might have had of being considered by the Senate.

Every summer in the Catskill mountain regions of New York State, there is a loss of life, due to fires in mountain hotels. These structures, almost without exception are frame construction. New York State once had a State Fire Marshal. He was former Deputy Fire Chief Thomas J. Ahearn of New York, but when Charles S. Whitman, (Rep.) became Governor the office was abolished. Mr. Ahearn was a democrat.

DALY.

Arson Committee Causes Huge Savings—The activities of the arson committee of the National Board of Fire Underwriters for the past year have assisted in decreasing the annual fire losses of the country. They are responsible for 462 arrests, 219 convictions and have aided local authorities in preparing arson cases for the courts.

Wetting Down Must Be Thorough

(*Continued from page 782*)

Again it should be restated that no fire is out until the last spark has been extinguished. Furthermore, one of the most essential points in operating at a fire is to make sure that fire is not extending in any direction and this can only be accomplished through making frequent surveys during the course of the fire.

Fire From Plastic Floor Covering

Two men were at work laying T. M. B. plastic floor covering on the second floor of a new Masonic Temple building, a two-story, fire-resistive building which had just been completed in New Orleans, La. The floor covering for the first floor had been completed the previous day. The men were using a blow torch presumably to smooth out lumps in the floor surfacing which hardens very rapidly, as it is put down in thin coats, gasoline or naphtha being used as a solvent. This torch set fire to the gasoline saturated flooring and flames spread so rapidly that both men were seriously burned before they could escape and had to be removed from building by other workmen. The flooring was burned and also considerable damage was done to plastering and wood doors, etc. Both men died from burns several days later.

Patented plaster floor coverings are now being quite widely used. There is a severe hazard involved in the process of laying them due to the highly inflammable nature of the solvents used. This type of flooring is used as a wearing surface over concrete floors. When it hardens and sets it gives a finish similar to linoleum and a firm and resilient floor. The name of the floor covering used in the above building was "T. M. B.," manufactured by the Thomas Moulding Brick Company of Chicago, Ill. The material is shipped in steel drums. It resembles asphalt which forms its base and contains other materials such as asbestos fibre, silica sand and mineral pigments. Naphtha or a similar volatile solvent is used to work the compound into a plastic state. The drums are emptied into a mixing vat and thoroughly stirred and mixed before laying.

If further thinning is necessary, ordinary gasoline is generally used. In laying the flooring, it is spread with a trowel in several thin coats which dry rapidly. This flooring, when completed, is about 1¼-inch thick. Since the process of laying this type of flooring depends on its quick-drying qualities, due to the volatility of the solvents used, the surrounding air is sure to become charged with a highly explosive vapor which may be ignited by any small spark, flame or other source.

Manufacturers of various types of plastic floor coverings recognize the hazard of laying this type of flooring for they furnish with each consignment, "No Smoking" signs to be displayed in the building when the material is being used and workmen are particularly warned.

This fire shows that in spite of the warning and instructions to be careful, the employees are careless and apparently do not realize the material they are working is hazardous to life as well as property.

Chief Cody of Atlanta Honored

Prominent members of the city and fire departments of Atlanta, Ga., gathered on July 6 at the Ansley Hotel to honor Chief William B. Cody on his sixty-eighth birthday and his forty-eight years of service in the department. Many of the officials present were able to recall July 3, 1878, the day when the chief first joined the fire department.

At one end of the long table sat Chief Cody flanked on either side by former chief W. B. Cummings, and W. B. Cody, Jr., and L. R. Cody, sons of the present chief. Nearby sat the Mayor and members of the board of firemasters. Mayor Sims spoke of the great service that Chief Cody rendered the city in his many years. He said, "The reward of a public official is not in money but in the knowledge that he has done his duty faithfully and conscientiously."

Chief Cody was the life of the party. His talk did not consist of details of the past but he spoke of present day conditions and problems. The chief still rides to fires and has not yet thought seriously of retiring.

William B. Cody was elected chief eleven years ago. During his service as chief he has personally supervised every major fire including the conflagration of May 1917 when 1,643 homes were destroyed.

JOHN A. STULB.

Instrument to Detect Motor Trouble

After four years of experimentation and tests, a precision instrument is being marketed which will measure the fit of piston rings, the percentage loss of compression in individual cylinders, will facilitate the location of warped and scorched cylinder, and in general will act as a means of finding internal cylinder troubles.

It will be found a boon in large departments that do their own motor repairing, and especially so to the mechanic in charge of the regrinding of valves. It eliminates the guess from motor repair and enables the master mechanic to know when certain repairs are necessary. Compression is one of the most important requirements in the operating cycle of gasoline motors and it is one of the most difficult things to maintain to its proper standard due to the wearing of the cylinder parts, valves, rings and so forth. Should the compression become unbalanced in some of the cylinders of the motor, the very fine balance of the motor assembly which tends to eliminate the motor vibration, is lost. The compression-loss micrometer will permit the location of the faulty cylinders.

All that is necessary is to remove the spark plug, attach a flexible cable to the point where the plug was removed and attach the other end of the cable to the micrometer instrument.

The Remedy for Static Sparks

The danger from sparks of static electricity from belts, moving machinery, and even from workmen, is a hazard that is usually overlooked. Static sparks are most likely to occur in the cool dry days of fall and winter. Therefore, now is the time to plan to guard against this hazard.

An inexpensive and effective means of prevention is to ground the machinery and shafting and humidify the air in the rooms where static electricity is likely to cause trouble. This simple remedy is recommended in factory workrooms where gasoline or rubber cement is used, and also in the picker and card rooms of cotton mills where fine lint accumulates.

Humidity for preventing fire has already proved its worth at the Hood Rubber Company, Watertown, Mass., where one hundred and twenty-two fires had occurred in the spreader room within three years, due to static electricity. At the recommendation of Insurance Engineers a small jet of steam was allowed to escape into this room whenever the relative humidity fell below forty per cent. This practice has been followed now for two years and not a single fire has occurred.

Novel Aids Used in Drill Tower Work

In connection with the work of the San Francisco, Cal., drill tower training, the department has developed a portable cutting outfit which was built in the department shops.

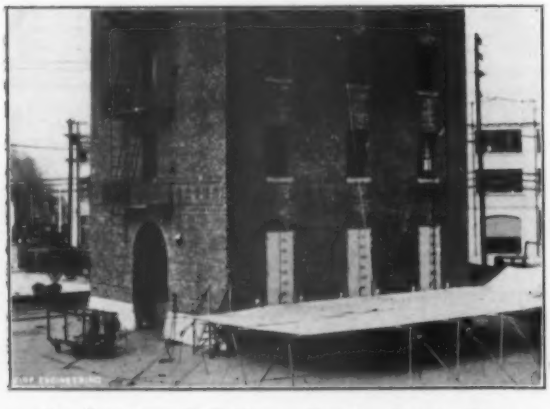
The cutting outfit is arranged with two handles so that the entire outfit can be carried by two men in a manner similar to a stretcher. When the outfit is opened, one end rests upon the ground and an easel supports it in a slanting position. It is provided with a metal door.

For enabling a fireman on a roof to keep in touch with the men below, there has been designed a portable telephone outfit with 350 feet of telephone wire on a reel. All of the telephonic apparatus is arranged to fit into a box which can easily be carried by two men.

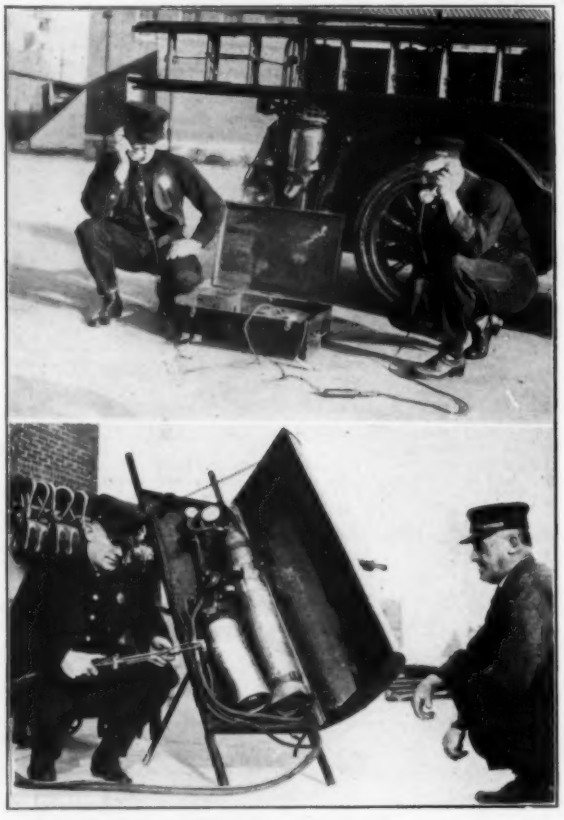
A high pressure valve has been mounted on a four-wheel truck for the training of the firemen in the proper method of opening and closing the valve. A platform has been mounted on four wheels—the firemen stand on the platform and operate the valve which requires 176 turns of a hand-wheel to open or close completely. In actual practice the valves in the high pressure system are subject to a pressure of three hundred pounds.

The drill tower which is constructed of joisted brick is seven stories high. A net forty feet long and supported by a series of removable steel posts and springs attached to the sides of the tower is used to guard the safety of the students while they obtain practice in the use of some of the department tools and in the drill tower evolutions.

CHARLES W. GEIGER.



San Francisco Drill Tower Showing Net in Place.



Upper—Showing the Portable Telephone in Use at the San Francisco Drill Tower. Lower—The Portable Cutting Outfit in Position for Use. At Right is Captain Rocca Who is in Charge of the Drill Tower Work.

Firemen Receiving Instruction in the Proper Method of Opening a High Pressure Valve.

The Los Angeles Fire Dept. is 100% B & M equipped.

Hundreds of Cities over the country using our sirens.

We gladly send B & M Sirens to cities on approval without expense.

B and M

SIREN

"It pierces the air"

You Will Eventually Buy B & M's

Fire officials find the powerful B & M fire apparatus Siren to be ideal to meet modern street traffic conditions. Electrically-driven Sirens cannot be operated successfully by storage batteries in hard and continuous service. Hand-rotated Sirens are both exhausting and dangerous to the operator. Therefore, the mechanically-driven B & M Siren with its piercing screech that can be heard for miles is the ideal fire apparatus Siren.

Send for Complete Information

B & M MANUFACTURING CO.

Lester H. Miles, Proprietor

931 So. Main St. Los Angeles, Calif.

BUCKEYE WHISTLES

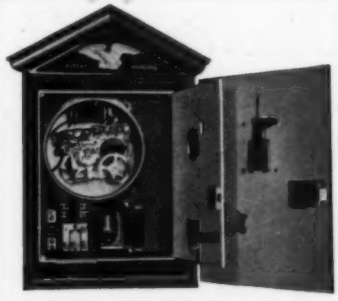
Do they hear You Coming?

You can MAKE THEM HEAR you by using the same type of signal that is being used by the Locomotive. And why not? For 75 years the great American Railroads have been using WHISTLES to attract attention to an approaching train. If more effective warning signals existed, the railroads would be using them today—for they are spending millions annually to prevent the **DESTRUCTION of LIFE and PROPERTY.** Our Engineering Department has now made it possible for Fire Apparatus to also enjoy the protection of

BUCKEYE WHISTLES

A Warning Signal that Warns

BUCKEYE IRON & BRASS WORKS ~ DAYTON, OHIO



FIRE ALARM BOXES

Approved and recommended by Fire Department Engineers and Officials in every section of the country. Completely protected and housed in cast aluminum cases, originated by this company and proved superior to all other types.

Investigate these boxes before you buy. Catalog describing complete Fire Alarm and Police Signaling equipment mailed free upon request.

HARRINGTON - SEABERG CORP.

MOLINE, ILLINOIS

Manufacturers

Traffic Signal Equipment Fire Alarm and Police
Magnetic Sign Flashers Signal Equipment
Complete Fire Signalling Equipment for Municipalities

Complete Installations

Dept. G.

The Burrell All Service GAS MASK

The Standard for the Fire Fighters of America

The Burrell All Service Gas Mask is the only mask approved by the United States Government for complete protection against Carbon Monoxide, Ammonia and every known poisonous gas. Write for Bulletin F-3.

Mine Safety Appliances Co.

Braddock Ave & Thomas Blvd. Pittsburgh, Pa.

BADGES

of Every Description

QUALITY GUARANTEED

Right Prices
Prompt Deliveries

We Also Make the Durable

"ROSS" HELMET

Our latest catalogue and price list will gladly be sent on request.

EVERSON-ROSS CO., INC.
88 Chambers St., New York

Selden

6-Cyl. Fire Trucks

PACEMAKER and ROADMASTER, in actual service have proven dependable and powerful. Speeds up to 50 miles per hour.

The *Pacemaker* chassis has a 55½ H. P. 6-cyl. motor, which will pump 300 gallons per minute, and is built in 9 and 12 ft. loading spaces.

The *Roadmaster* chassis can be furnished with a 72, 86 or 110 H. P. motor, which will pump 500, 600 and 750 gallons per minute in 11 and 14 ft. loading spaces.

You'll be satisfied with Selden

SELDEN TRUCK CORPORATION
Rochester, N. Y.

MATHEWS

(Reg. U. S. Pat. Off.)

FIRE HYDRANTS

for

DOMESTIC

and

HIGH PRESSURE

Service

Note—

The positive waste valve.

All operating threads are above the Stuffing box.

No toggles, small screws or other small, quick-wearing parts.

All moving parts are bronze or bronze bushed.

The outside casing permits replacing a two-way standpipe with a steamer and two-way standpipe without digging up the ground.

Valves and Boxes
Cast Iron Pipe and Fittings

R. D. WOOD & CO.
Phila., Pa.

Successful Since Sixty-Eight

Only Perfect Reliability Will Serve

In the manufacture of fire alarm signals, Union Water Meter Company has always realized that absolute perfection in design and workmanship are primary requirements.

Because of faithful adherence to these principles down through the years the Worcester Fire Alarm Signal has gained its high reputation.

Made by fire alarm specialists. Operated by either steam or air. In four siezs.

Write for catalog R-51.

Union Water Meter Co.

WORCESTER, MASS.

New York Office:
50 Church St.

Phila. Office:
539 Real Estate Trust Bldg.

Modern Fire Alarm Signalling

(*Continued from page 772*)

Be extra careful in tightening up marble shelves and kickplates so as to avoid breakage.

Hooking up Connections on Switchboards

Run in the generator leads and be sure you get them connected in the proper polarity, i.e., positive on positive and negative on negative. Lace these wires or support them on hard rubber posts. Run the battery leads in next and be sure to connect them according to marks on the board. Extreme care should be taken to test these wires out as you attach them. Lace them with waxed twine and form neatly.

The outgoing lines can next be hooked up and laced with waxed twine. The repeater lines should be hooked up on the posts marked on the back of the board. They should be tested out on both ends to avoid mistakes. All wiring should be formed neatly and laced tight to agree with the wiring already on the board.

After all connections are made the board will have to be arranged in proper order as described here.

Arranging the Switchboard for Charging

First test out the charging current for polarity and make sure it is correct. Now it is necessary to figure out the grouping of the batteries and a test case is given here.

Assume we have a 110-volt generator; we will first set the voltage switch at 110 volts. Now assume we have 10 sets of batteries all of a different voltage, No. 1 being 44 cells, No. 2 23 cells, No. 3 16 cells, No. 4 26 cells and the others all of a different voltage. It is necessary for us to allow 2¼ volts per cell for charging. It will be seen that No. 1 needs a circuit of its own as the total voltage is 110 volts. Number 2 and 3 can be charged in series as their total is only 97 volts and possibly number 4 can be tied in with 5 if of a small number of cells. We will figure out the least number of groups we can make and will presume that we have five in this case. As we are charging at .75 amps., we will have to multiply .75 amps. by five which is the full number of sets. That gives a total of 3.75 amps. Set the rate switch in the third position marked 2. to 5. amps. There is the necessary medium between these two numbers for proper charging. Our series parallel-switches will be set so No. 1 is on the right hand contact and No. 2 is on the left hand contact; No 3 will be set on the right hand contact and the others as is necessary. This will put 1 alone, 2 and 3 together and other numbers as required.

The test measure switch must be set in the position marked in order to test the batteries. Put in the fuses and make sure they are good. Place the test jack in the first jack and note if you get a reading. It should be about 22 volts in this case. If this does not correct the trouble you have not connected the leads up right and you must find your trouble before going any farther.

When you are able to get a reading on all the test jacks we can proceed farther. Next set the 7-step resistance switches on the upper left hand contacts or the seventh position and be sure that the lamps that are all in the board, are screwed up tight and that none are burnt out.

We will now start up the generator and cut in our field rheostat after the machine is up to speed. Now get a sheet of paper and a pencil and take the voltage of each battery.

Push the main line switch in and if the automatic control comes up and stays up we can continue farther; if it does not place the 7-step switch in the sixth position, see if the armature attracts. If it still flutters and does not go up and stay there, we must look for the trouble. It may be that the polorarity is reversed or the current delivered is too small or too high. After you have corrected the trouble try it again. If the armature goes up and stays a second or two and drops, it will be necessary to turn the 7-step resistance switch down a step or two. When the armature goes up and stays up place the jack in No. 1 test jack and see what you are giving the battery. If not enough, turn the rheostat down until you get as near .75 amps as is possible. Continue to adjust the switches as they should be, and make repeated tests in order to get them all as even as possible. Be sure to remember that where two or more batteries are charging in series, whatever you move one rheostat will affect both batteries.

The board should be watched for any unusual faults for at least two or three hours after first starting it up.

After we once have our board set in the proper way it will not be necessary to reset it every time we wish to charge a battery. It is simply necessary to turn the gang switch over from the working to the charging position and to start up the generator and close the main line switch. The seven step switch will have to be adjusted every time the voltage of the battery is increased as it will change the working of the board.

Testing the Working or Signal Circuit

A suitable terminal box or cross connecting rack is usually provided in the basement of the fire alarm station, and before any testing of the working circuit is done, both sides of the circuit must be shorted or connected. Care should be taken to see that the outside lines are not hooked up except in a brand new installation where it is possible to test the complete installation at the same time the board is tested. Before shorting the circuits in the basement or elsewhere be sure to take the line fuses out of the board, and throw the line resistance rheostat over into full position way over to the right. This places 180 ohms resistance in the circuit. Now connect the circuits together being sure to short the proper pairs.

Proceed to the apparatus room and put the pin switches in the proper places and have all fuses in place, as you insert each fuse you should hear the repeater magnets pick up if the repeater is cut in. After all fuses are in, take the test jack and insert it in each working circuit to note if you get a reading. You should receive a reading on every circuit that has a battery on it. All circuits which are dead or have no battery in them should have jumpers placed on them so as to allow a series circuit to be made. The repeater single switches which are not used should be jumpered out so as to make a continuous circuit when thrown in series position.

Take the wire off of the No. 1 outgoing circuit at the back of the board and hook a bell up in series with this circuit so that when the circuit is closed the ball armature will attract. Now when we have everything all ready, start with 1 circuit and throw the repeater single switch on the off position—this should cause the bell to ring and should give the repeater time to trip and then close the switch. Next do the same with the remaining nine circuits seeing that every circuit is working properly. After this is done, test it out with the gang switch in a parallel position seeing if each one works. Then try it with the repeater cut out and see if it is working properly. We can now connect the different circuits as they will be and hook up the box lines to the board. If it is possible to do so, have a test made by pulling a box on all the circuits. Extreme care should be taken to have the proper orders given before sending in boxes. Always when in operating order have the repeater gang switch in a series position. When it is desired to cut out any circuit for any reason place the repeater in a parallel position and wait until it stops, then throw the single switch in an off position. Failure to do as above will result in a stray blow.

Make it a practice to charge A side one day and B side the next and never let a battery get completely run down. A list of troubles which might arise and their remedies will be given here to help you in keeping your board in proper order.

Troubles and Their Remedies

No. 1 Board will not charge. Get a voltmeter and see if you are getting current at the terminals. If not remedy under causes given for generators. If you get current at the terminals look for the following troubles: Main switch open or has dirty blades; fuses blown; starting lamps burnt out; auto control unit is stuck or fingers caught; spring on control too tight, rate switch set too high or too low, batteries grouped wrong, voltage switch set in wrong position, or open wire in back of board.

No. 2. One or two circuits fail to charge. The trouble will be found in the following things: battery fuse is blown; resistance lamp burnt out; dirty contact on auto control; a rate switch is in the wrong position or has dirty contacts, dirty or a loose contact on the contacts of the battery gang switch or single switch; open wire on back of board.

No. 3. Can't get proper charging rate on the circuits. Batteries of too much voltage connected in series; 7-step rheostat is set wrong; series parallel switches set wrong; dirty contacts generator hooked up wrong, open wire on back of board.

No. 4. Automatic control works bad. Any trouble listed above; keep all contacts bright and clean. A word of caution—don't prop control unit up with a stick or brace—its best purpose is to release when trouble occurs.

Don't Attempt to Adjust an Automatic Control Unit

No. 5. Never put any polish or cleaning compound on the boards but wipe off daily with a clean rag. Never put oil or grease on any portion of the board. No not attempt to shine brass parts as they are all lacquered and will tarnish if cleaned or shined. Keep the direct sun rays off the board as it is harmful.

Working Circuit Troubles and Causes

No. 1. Line is open. It can be caused by broken line wire, open fuses broken resistance unit, repeater magnet burnt out, battery fuse blown, repeater switch open or dirty, open or dirty switches and contacts, pin switch plug fallen out.

No. 2. Line opens only when batteries are shifted. Battery

PROPOSED IMPROVEMENTS

Green Island, Jackson Co., Iowa.—Village Board of Trustees will receive bids for a 350 and 500 gallon motor pumper.

Marshalltown, Marshall Co., Iowa.—Plans have been prepared for erection of fire station.

Plainfield, Union Co., N. J.—City of Plainfield will erect fire station at approximate cost of $200,000. (G. E. Robinson, Architect, Chamber of Commerce Building, Boston, Mass.) Plans, etc., from Chas. C. Graves, Chairman, City Hall, Plainfield.

Ridgefield, Borgon Co., N. J.—Mayor Alan B. Conor and Ridgefield Council meet to discuss details of bids concerning the construction of the new fire station for Hose Company No. 1 on River Street.

Canton, St. Lawrence Co., N. Y.—New $35,000 fire station to replace old Court Street structure.

Middletown, Orange Co., N. Y.—$55,000 bond issue will be presented for the approval of taxpayers on August 5th election.

Dover, York Co., Penn.—Citizens of Hartly in West Dover have taken steps toward future fire protection by organizing a volunteer fire department. Roger A. Davis elected president.

Lynchburg, Campbell Co., Va.—City purchases property at Westover Boulevard and Memorial Avenue for fire station.

Saukville, Ozaukee Co., Wis.—General assembly plans to purchase fire fighting equipment including motor chemical equipment.

Nicolett, Nicollet Co., Minn.—Committee raising funds for purchase of motor fire apparatus.

Milton, Cabell Co., W. Va.—Fire apparatus and equipment to be purchased.

Watertown, Jefferson Co., Wis.—Report on proposed purchase of fire apparatus expected after next council meeting.

Gibson City, Ford Co., Ill.—Election to be held on Aug. 10, to vote on a $7,000 bond issue for purchase of fire apparatus.

Stuttgart, Arkansas Co., Ark.—The city council has voted to buy a 600-gallon pumper for fire department at cost of $11,000. Resolution also passed ordering new hydrants.

Atascadero, San Luis Obispo Co., Calif.—Fire district will erect fire station in Atascadero.

Pomona, Los Angeles Co., Calif.—Chief Jack Sewman recommends that present hydrants in business district be replaced by larger size plugs.

Rock Island, Rock Island Co., Ill.—City Electrician Wm. J. McNealy reports real need for more fire alarm boxes.

Aurora, Kane Co., Ill.—It is planned to equip all motor fire apparatus with new sirens in the near future.

Kokomo, Howard Co., Ind.—The scarcity of fire alarm boxes and hydrants and the need of additional ones in specified localities explained by Chief John Aspy.

Nashua, Chickasaw Co., Iowa.—Nashua Volunteer Fire Department plan to erect a $10,000 auditorium at an early date.

Manille, Crawford Co., Iowa.—Council to vote on purchase of new fire truck for department.

Des Moines, Polk Co., Iowa.—Council adopts ordinance providing for $50,000 bond issue to be used for purchase of new fire equipment—which will include traffic signal system for business district.

Aberdeen, Brown Co., S. Dak.—North side citizens ask for fire station.

Ellensburg, Kittitas Co., Wash.—Special committee named to investigate situation with regard to city's need for a new fire truck. It is the concensus of opinion that a truck and additional equipment should be purchased at estimated cost of $15,000.

Milwaukee, Milwaukee Co., Wis.—Site now being sought in neighborhood of Eleventh and Oklahoma Avenues for fire station.

Boyd, Chipnewa Co., Wis.—Chris Luebstorf elected chief of department.

Belmont, San Mateo, Cal.—Department to purchase as many fire extinguishers as funds will allow.

Wasco, Korn Co., Cal.—Plans being completed for the establishment of two fire companies and installation of fire alarm siren. Jack Bennett elected chief of newly organized volunteer fire company.

Hood River, Hood River Co., Ore.—Fire equipment inadequate in rural district.

Springfield, Lane Co., Ore.—Council to present $7,500 bond issue to city, to be used for purchase of pumper and other equipment for fire department.

Fire Alarm Equipment FOR SALE

Sealed bids for the purchase of unused fire alarm equipment of the Freeport Fire Department will be received at a meeting of the Freeport Fire Council on Tuesday evening, August 17, 1926, at 8 o'clock, when the bids will be publicly opened.

This equipment was in active use until late in 1925, and consists of the complete inside equipment used in connection with maintaining a seven-house indicator circuit, including battery rack, cells, switchboard, rectifier, punching registers, etc. It may be seen at fire headquarters, North Main Street, Freeport.

The right is reserved to reject any and all bids.

For further information apply to CHARLES P. FRITZ, Chairman Fire Alarm Committee Freeport Fire Department, Freeport, New York.

8-10

Attractive Territory Open for Apparatus Salesman

If you are looking for a profitable connection with a well-known and progressive fire apparatus manufacturer, send complete information regarding your qualifications to Box 123, c/o FIRE ENGINEERING, 225 West 34th St., N. Y. C.

7-25-10-25

FOR SALE Fire Apparatus

American-LaFrance Triple Combination, Type 75. Address Box 122, % FIRE ENGINEERING, 225 West 34th St., New York City.

7-25, 10, 25.

fuse is blown and needs to be replaced; contact fingers on the gang switch are loose or broken.

No. 3. Line opens when test jacks are plugged in the jack. Wire is broken in the lead from the jack to one of the meters.

No. 5. Line opens when resistance switch is moved. Resistance switch dirty or loose, resistance unit dead.

The repairing of these troubles is usually a simple matter and can be done quickly and easily by the average man.

Have a man detailed to take care of the boards and the charging of the batteries and do not have too many men operating the apparatus. Only those who will give the boards their best attention should be allowed to control them.

Should any one like to know more about the operation or about the boards, if they will write the author in care of this magazine he will furnish them with any information they desire.

If any one who is planning a new office would like assistance in arranging or planning the kind and type of apparatus he would need, the author will do all he can possibly do to assist him.

The next article will take up protector boards and will consist of description, types, operation and care.

Bridgeport Establishes Condemnation Board

After investigating several complaints about buildings that were constructed so as to more than ordinarily endanger the safety of persons therein, the members of the Board of Aldermen of Bridgeport, Conn., recently passed an ordinance creating a Board of Condemnation. Three members constitute the board, the president of the board of health commissioners, president of the building commissioners and the chief of the fire department. The ordinance in its entirety is as follows:

Be it ordained by the Common Council of the City of Bridgeport:

Section 1—For the purpose of this ordinance a "building constituting a menace to public safety" is defined as,

1—Any building or other structure (a) situated within the fire limits of the City of Bridgeport, (b) of wood frame construction, and (c) so constructed as to more than ordinarily endanger the safety of persons therein in case of fire or so situated as to more than ordinarily endanger other buildings or property in the vicinity in case of fire or so constructed or situated as to render the same peculiarly susceptible to fire, from within or without; or

2—Any building or other structure in the City of Bridgeport which, by reason of rot, weakened joints, walls, floors, underpinning, roofs, ceilings, insecure foundations, or other cause has become so dilapidated or deteriorated as to endanger the safety of persons therein or nearby.

Section 2—The Board of Condemnation is hereby created and shall consist of the President of the Board of Health Commissioners, President of the Board of Building Commissioners and the Chief of the Fire Department.

Section 3—Said board is hereby granted the power, after hearing, to conclusively find and determine whether any building constitutes a menace to public safety. Said board may as part of said hearing, inspect such building and the facts observed by said board at such inspection shall constitute evidence upon which it may base its findings.

Section 4—Whenever said board shall have determined that a building constitutes a menace to public safety, it shall thereupon conclusively find and determine what repairs or alterations are necessary or whether the total destruction of such building is necessary in order that such building shall not constitute a menace to public safety. Said board shall also conclusively determine and find the length of time necessary to complete such repairs, alterations or destruction, such time to begin to run upon service of findings, and said board may, for good cause, extend such time for not to exceed thirty days.

Section 5—The findings of the board shall be in writing and shall be served upon the owner personally, and if after due diligence he cannot be found, shall in lieu thereof, be posted for ten days in a conspicuous place on the building.

Section 6—It shall be unlawful and punishable by a fine not exceeding $100 for any owner of any building which has been found by the Board of Condemnation to constitute a menace to public safety to fail, after service of findings as provided in Section 5 hereof, to destroy, alter or repair such building in accordance with the findings of the board and within the time allowed by the board, provided such owner has the legal power to so destroy, alter or repair such building, and it shall be unlawful and similiarly punishable for any owner after he has received the notice of hearing above provided to disable him from destroying, altering or repairing such building. Each day's failure to so alter, destroy or repair such building shall constitute a distinct and separate offense.

Section 7—Every building constituting a menace to public safety is hereby declared to be a public nuisance and said nuisance may be abated summarily or by civil action.

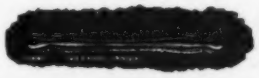
Section 8—Every building found by the Board of Condemnation to constitute a menace to public safety shall, if not destroyed, altered or repaired within the time allowed by and in accordance with the findings of the board be deemed and every such building is hereby declared to be a public nuisance and every such nuisance may be abated summarily or by civil action.

Alfred W. Burdick, City Clerk.

T. F. MAGNER.

BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.
230 West Randolph St., Chicago, Ill.



The principal reason for the failure of fire hose before the Bi-Lateral construction was invented and why it had to be purchased so frequently by municipalities is because it was necessary to carry it in a flattened position.

The Bi-Lateral hose is made to flatten. This is why Bi-Lateral fire hose is guaranteed for six years instead of three.

When coupled with rocker lug couplings it makes a superior fire fighting line.

C. G. BRAXMAR CO.

242 W. 55th ST., New York City

Since 1879

BRAXMAR BADGES have been recognized as standard.

Illustrated Catalog gladly sent on request.

BADGES

No. 863F

MORSE

FIRE BOAT EQUIPMENT

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

Write for Catalog

Andrew J. Morse & Son, Inc.
221 High St. Established 1837 Boston, Mass.

DANGER

from Smoke and Gases eliminated by using the

DONTFEAR

Smoke and Fume Respirator

Protection for the men results in greatly increased efficiency and quickly extinguished fires.

Send For Descriptive Catalogue

No Sponge. Price $5. With Airtight Goggles $5.60

Gibbs-Wahlert Mask Co.
388 Jay St., Opp. Fire H'q'trs. Brooklyn, N.Y

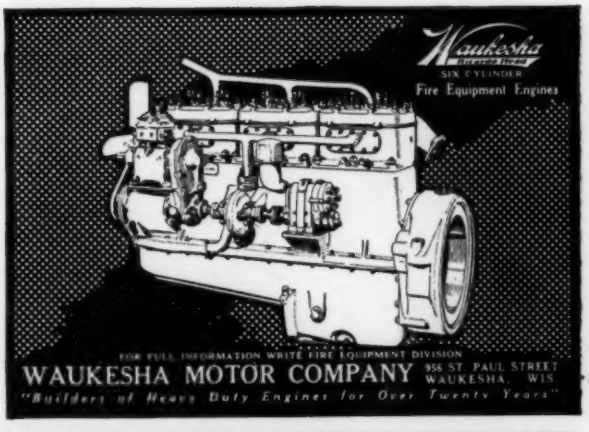
LARKIN Shut-off Nozzles

Over 2000 Fire Departments have 15,000 Larkin Shut-off Nozzles in service. They have a successful record that is not exceeded by any article used in the fire service. Specify and insist upon them in buying new apparatus.

Write for catalog

The LARKIN Mfg. Co.
Dayton, Ohio

High Grade Fire Dept. Supplies of All Kinds


Waukesha
SIX CYLINDER
Fire Equipment Engines
FOR FULL INFORMATION WRITE FIRE EQUIPMENT DIVISION
WAUKESHA MOTOR COMPANY 356 ST. PAUL STREET WAUKESHA, WIS.
"Builders of Heavy Duty Engines for Over Twenty Years"

The STOUGHTON

Community Fire Fighter is Designed Especially for Small Towns

Fire apparatus for volunteer and small town fire departments must be designed, built and equipped to meet particular requirements. It must be a combination of several distinct types built for city use. It must be complete in every detail.

The Stoughton, the *Original Community Fire Fighter*, is designed to meet these requirements and made in three sizes,—300—350 and 500 gallon capacities. Each model and every piece of apparatus guaranteed to pass the National Board of Fire Underwriters' twelve-hour pumping tests.

May We Send Complete Information?

STOUGHTON WAGON COMPANY
FIRE EQUIPMENT DIVISION, STOUGHTON, WIS.
STOUGHTON FIRE APPARATUS CO., 250 W. 57th St., New York City, Eastern Representatives

HALE PUMPS

THROUGH constant improvement in design, methods of manufacture and materials the *Hale* pump has steadily forged ahead.

HALE FIRE PUMP CO.
Conshohocken, Pa.

Beat the Fire to it with an ERICK ELECTRIC SIREN

30 Days Free Trial

For Volunteer Fire Departments in towns of from 300 to 5,000 population, there isn't a Siren or a system in the world to equal the Erick. Night and day—year in and year out—it offers best protection to lives and property. The Erick is the only Siren using one big whistle on a powerful 3 and 5 h. p. motor which throws its sound evenly in all directions—louder and more penetratingly than all others. Write for full information and details of liberal 30 Day Free Trial Offer.

Erick Electric Siren Co., Inc.
95 S. Wabasha St., St. Paul, Minn.

"Pirsch" Builds Complete Line of Motor Apparatus
Let Us Submit Bids on Your New Apparatus
Catalogue No. 16 Now Ready! Send for it.
PETER PIRSCH & SONS CO.,
Since 1857
Kenosha, Wisc.

MAXIM City Service TRUCKS

with Maxim-Built Ladders

are unsurpassed for design, completeness of equipment and sturdiness of construction. Like all Maxim apparatus and equipment, they are built "Just a Little Better All Around."

MAXIM MOTOR COMPANY, Middleboro, Mass.
Metropolitan Sales Agents:
The Woodhouse Manufacturing Co., 35 Warren St., New York

GENUINE
FOAMITE PROTECTION

Splashproof Extinguishers — Chemical Tanks — Motorized Equipment

For Every Kind of Fire
"CHILDS" MOTOR FIRE APPARATUS
FOAMITE-CHILDS CORP'N, Fire Protection Engineers
138 Turner Street, Utica, N. Y.

RED ARROW SIREN

Siren with Storm Hood

1. Double-tone, and of greatest carrying power.
2. Ball bearings throughout.
3. Accurately machined and balanced.

30 Days' Free Trial
Write for Circulars

DECOT MACHINE WORKS
Sauk City, Wis.

Sanford Fire Apparatus

All Types and Sizes

Fire Apparatus Division
SANFORD MOTOR TRUCK CO.
Syracuse, N. Y.
Builders of Quality Products for 15 Years

HAHN

Motor Fire Apparatus

Write for literature and prices on our 250, 350, 500 and 750-gallon triple combinations, chemical and hose combinations and city service trucks.

Hahn Motor Truck Co.,
Hamburg, Pa.

Attractive Dealer Propositions

Good territory still open to men experienced in selling fire apparatus

New Models — All sizes to 1000 gallons. All powerful 6 cylinder Motors — Pumpers, Ladder Trucks, Combinations.

Kenosha Fire Engine and Truck Co.
Kenosha, Wis.

FALSE ALARMS

SELF-SERVICE

The news item concerning four firemen on Long Island setting fire to a number of places in their village in order that their fire company might get all the glory, has prompted a writer in the Boston Globe to contribute the following:

If things are dull in the fire-fighting line is it excusable for the firemen to go out and create "new business?"

This is a question which may find an answer through the arrest of four Long Island firemen charged with setting a chain of fires to which they sped with rare speed and which they fought with unusual brilliancy and dash.

The firemen are young and ambitious. They like pinochle and checkers in moderation but can't see why these games should constitute a fire fighter's chief diversion. Their company had been given a brand new piece of motor apparatus by the taxpayers. After getting the apparatus the boys sat around the fire house and waited for the taxpayers to give them some fires. After waiting what they considered a reasonable time, it is alleged, they went out and rolled their own.

* * *

Every fireman knows the temptation. He mopes around the fire house day after day, week after week and sometimes month after month, playing cribbage, arguing over the best pitcher in the National League, polishing the brass on the hose wagon, doing the newspaper picture puzzles, etc, etc.

Over him there steals the great longing for a fire. It does him no good to complain that business is bad. Nobody ever sympathizes and says, "Well I'm sorry to hear that. I can't do very much as I have only a very small house, but I'll set fire to that if it will do you any good."

* * *

All firemen know the time that is wasted getting to fires. They know too well how much time is lost running around in circles looking for the blaze. They all realize what a great help it would be if they knew in advance where the fire would be and when.

How much better it would be if a fire company could plot out all its fires each day, calling the firemen together immediately after breakfast, scheduling the fires in alphabetical order, giving the exact street addresses and the route to be taken!

Why not a formal announcement of coming fires? For example:

1—Card From a Fire Captain to One of His Men:

> CAPTAIN
> ROBERTUS WOOFUS
> requests the pleasure of the company of
> HOSEMAN WILLIS PLOTZ
> at a fire to be held at the home of Mr. Charles Brown, 135 Elm street, this city, tomorrow evening at half past nine o'clock.
> **Please bring scaling ladders**

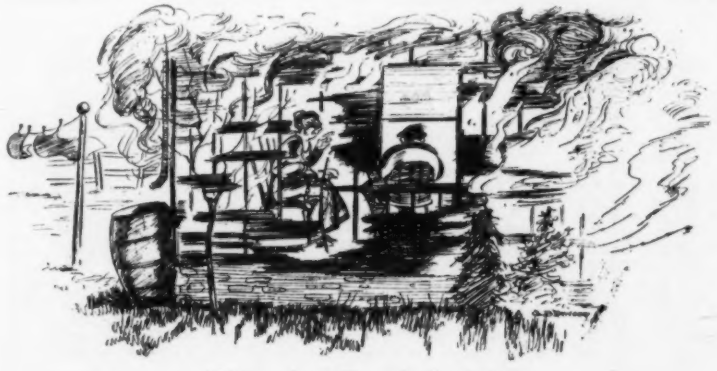
2—Card To Their Captain From Firemen:

> This is to announce that the firemen of HOSE COMPANY NO. 8 will give A SERIES OF 6 FIRES at the homes of deserving citizens during the coming week. Your presence is cordially requested. A list is being sent you.
> **Informal** **R.S.V.P.**

A STORY OF WESTERN CHIEFS

There was a time in the history of Salt Lake City when fires were extinguished under the Devine guidance. During that time, Wood was prominent in most of the conflagrations. Fires continued from time to time, however, even though many were extinguished Bywater Then, for a time, a Vail was over the department; but this did not stop the march of progress, although certain of the fire laddies seemed to Glore in changes of administrations. Then the old order of things was brought back Bywater until conditions grew from bad to worse. Then the wise heads in our city commission awakened to the fact that the only safe, sane and effective method to battle successfully with the fire fiend was by Knight.

The alarm system is on a par with other equipment as shown by Reading the records.



"Hiram, I smell smoke."—Judge

IGNORANCE IS BLISS

Residents of Saugus stopped and gasped in amazement recently when they saw Captain Edward J. McTague and his chauffeur of the fire department riding towards the fire station with the entire bottom of their car on fire. Spectators shouted to them, and one of the firemen looked over and saw that everything was not right in Denmark.

The chauffeur put on all the speed that the car had in reserve and headed for the fire station where the flames were soon extinguished.

The papers were being collected after the time was up for the lieutenants examination. As the civil service commission official picked up one of the papers, he said to the applicant, "It has been reported that you were seen looking at your neighbor's examination paper three times. What have you to say on this matter?"

The victim: "He was such a poor writer that I couldn't get it all in one glance."

POOR FOOD

A member of a colored fire company was injured as he slipped on a ladder while shifting a hose line. He was taken to the local hospital and later one of the members of his company came to visit him.

"Well, Sam, how do you feel?" his friend remarked.

"I feel right tol'ble."

"Have you had any nourishment?"

"Yassir."

"What did you have?"

"A lady done gimme a piece of glass ter suck."

His curiosity being aroused by this information the friend looked up the head nurse, and found that one of the nurses had inserted a thermometer in the patient's mouth to take his temperature.

WHAT'S IN A NAME

In passing a busy corner, the fire apparatus while on the way to the scene of a fire collided with a truck. The traffic cop on the corner hastened to the spot to get the details of the accident, and to tell the truck driver, as politely as traffic cops can, just what he thought of him. After a five minutes lecture, he paused and asked, "What is your name?"

"It's on the side of me wagon," the truck driver replied.

After trying in vain to read the name, the officer said, "It's obliterated."

"Yer a liar," replied the driver in an offended tone, "it's O'Brien."

CONVENTION DATES

Aug. 9-14—WESTERN PENNSYLVANIA FIREMEN'S ASSOCIATION. 33rd Annual Convention, New Kensington, Pa. Secretary Convention Committee, R. A. Kanouff, New Kensington.

Aug. 16-17—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. 7th Annual Convention, Ogdensburg, N. Y. Secretary, Frank A. Emden, 1200 Lenox Ave., Utica; Vice-Pres. and Gen. Representative, Harold B. Nichols, 87 Oak St., Binghamton.

Aug. 16-18—UTAH STATE FIREMEN'S ASSOCIATION. Annual Convention, and Tournament, Park City, Utah. Secretary, Fred Peters, Murray, Utah.

Aug. 16-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 54th Annual Convention, Alexandria Bay, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.; Treasurer, William H. Swartout, 115 Main Street Ossining, N. Y.

Aug. 16-21—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. 39th Annual Convention, Atlantic Hotel, Morehead City, N. C. President, A. B. Horney, High Point; Secretary, John L. Miller, Concord.

Aug. 19-20—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Elks Home, Washington St., New London, Conn. Secretary, D. W. Harford, South Norwalk.

Aug. 19-21—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Long Beach, Cal. Secretary, H. E. Strasser, 1171 10th St., San Diego, Cal.

Aug. 23—NORTHWEST ARKANSAS FIREMEN'S ASSOCIATION. Annual Convention, Bella Vista Park, Ark. Secretary, F. Brock, Bentonville, Ark.

Aug. 24-27—DOMINION ASSOCIATION OF FIRE CHIEFS. 18th Annual Convention, Windsor, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

Sept. 1-2—MISSOURI STATE ASSOCIATION OF FIRE CHIEFS. 4th Annual Convention, Springfield, Mo., Secretary, District Chief J. T. Lynch, Kansas City, Mo.; President, Chief Horace G. Regan, St. Joseph.

Sept. 1-2—MISSOURI STATE ASSOCIATION OF FIRE FIGHTERS. 1st Annual Convention, Springfield, Mo. (Joint session, both associations, afternoon of Sept. 2) Secretary, M. J. Mulvoy, St. Louis, Mo.; President, Capt. A. J. Jones, St. Joseph.

Sept. 6—GREEN COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Labor Day, at Catskill, N. Y.

Sept. 8-10—IDAHO STATE FIREMEN'S ASSOCIATION. Annual Convention, Buhl, Idaho. President, W. E. Gelling, Rupert, Idaho. Chairman Publicity Committee, Alvin H. Reading, Buhl.

Sept. 13-15—KENTUCKY FIRE CHIEFS' ASSOCIATION. Annual Convention, Fire Department Drill School, Louisville, Ky. Secretary, Captain S. G. Render, Fire Department Instructor, 303 Speed Building, Louisville. For exhibits at State Fair, Sept. 13-18, address State Department of Fire Prevention and Rates, Frankfort, Ky.

Sept. 14-15—IOWA STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Manning, Ia. Secretary, E. E. Parsons, Marion.

Sept. 14-16—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 47th Annual Convention, Fall River, Mass. Secretary, Daniel J. Looney, 1046 Old South Building, Boston, Mass.

Sept. 21-23—NATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS. Fifth Annual Convention in Philadelphia, Pa. Dr. Harry M. Archer, N. Y. F. D., President.

Sept. 21-24—INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS. 30th Annual Convention, Battery Park Hotel, Ashville, N. C. Secretary, William R. Arkbuckle, Supt. Fire Alarm, Bayonne, N. J. Chairman Exhibit Committee, Daniel J. Morgan, Sales Engr., Hazard Mfg. Co., Wilkes-Barre, Pa.

Sept. 22-23—INDIANA STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, Marion, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

Sept. 24—NEW JERSEY FIRE CHIEFS' ASSOCIATION. Annual Convention, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Sept. 24-25—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 49th Annual Convention. Atlantic City, N. J. Headquarters, Executive Committee, Hotel Dennis. Secretary, William Exall, Chamber of Commerce Building, Newark, N. J.

Sept. 27-29—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Jonesboro, Ark. Date of meeting tentative. H. S Compton, secretary. Central Fire Station, Little Rock, Ark.

Sept. 27-29—KANSAS STATE FIRE CHIEFS AND STATE FIREMEN'S ASSOCIATIONS. 10th and 39th Annual Conventions respectively, Manhattan, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Oct. 4-9—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual Convention, Hotel Adelphia, Philadelphia, Pa. Secretary-Treasurer, Geo. J. Richardson, Rooms 105-6, A. F. of L. Bldg., Washington, D. C.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual Convention, Philadelphia, Pa. Secretary Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 12-15—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 33rd Annual Convention, Fresno, Cal. Secretary, Chief Jay W. Stevens, 1014 Merchants Exchange Building, San Francisco, Cal.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS. 54th Annual Convention, Hotel Roosevelt, New Orleans, La. Exhibits at U. S. Army Base Bldg., Dauphine and Poland Sts. Secretary, Chief James J. Mulcahy, Yonkers, N. Y. Chairman Exhbit Committee, Chief Wm. F. Daley, Brockton, Mass.

Oct. 20—OFFICERS' ASSN. FIRE PATROLS, SALVAGE CORPS AND PROTECTIVE DEPTS. OF U. S. AND CANADA. Meeting at New Orleans in connection with I. A. F. E. Convention. Secretary, John Ashmead, 76 William St., New York City.

Jan. 18-20, 1927—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 45th Annual Convention, Columbus, Neb. Secretary, H. A. Webbert, Kearney.

Aerial Inspection Made of Riverside, Cal.—Chief Hutchinson of Riverside, Cal., made an inspection of the city from an aeroplane flying over the city. He said that it is necessary to establish three new fire stations.

Oregon Fire Chiefs Meet

The Seventh Annual Convention of the Oregon State Fire Chief's Association was held at Corvallis, Oregon, on June 21 to 24, 1926, with the largest attendance since its organization, Chief Wm. Priebe, of Oregon City, presiding.

A committee was appointed to draft a bill to be presented to the next Legislature in January, 1927, to provide for a Firemen's College course in connection with the Oregon State Agricultural College. The State Fire Marshal reported that under the State laws passed by recommendation of the Association, the fire hose and hydrants in every city in Oregon and all (except two or three) large manufacturing plants had been standardized to the Underwriters National Standard, and also the standpipes on all large buildings. The sale of fire hose without standard threads is prohibited under penalty.

Mr. Elkins, of the State Industrial Accident Commission reported that most of the volunteer fire departments were under the protection of the Commission, and explained that under the Oregan law, volunteer firemen, regardless of amount of compensation, can be brought under the benefits of the Worken's Compensation Act by payment of 90 cents per month per man, and in case of injury while performing their duties as firemen they are entitled to the same free hospital service and as high a rate of compensation as the highest paid workmen. The fees are paid by the cities.

A course in first aid was given by Mr. Shoning, of the U. S. Bureau of Mines, about 25 chiefs receiving certificates of proficiency.

Salem, Oregon, was selected for the 1927 convention on a date to be selected later.

The officers elected were: Roy Elliott, Medford, President; Wm. Nusbaum, Eugene, 1st V. P.; Ivan Pearson, McMinnville, 2nd V. P. James Fletcher, Jr., Roseburg, Treasurer; Thos. Coates, Tillamook, Secretary.

Firemen's Day at Sesqui-Centennial

October 5 has been set aside as Firemen's Day in the observance of the Sesqui-Centennial which will be held in Philadelphia, Pa., from June 1 to December 1 in commemoration of the 150th birthday of the Nation.

On Firemen's Day, there will be demonstrations of fighting fires and of the different types of fire apparatus. In addition the convention of the International Association of Fire Fighters will bring 350 delegates from 264 cities. The Philadelphia fire department is working with the chamber of commerce to assure adequate hotel arrangements.

Nearly $24,000,000 contributed from federal, state, municipal and private sources will be expended to make the exposition, one of lasting value. The site which is located in the southern section of the city may be said to include 2,000 acres, being adiacent to the U. S. Navy Yard which will be open to visitors during the exposition.

Springfield, Ill., Must Reduce Losses

The fire hazards in Springfield, Ill., must be reduced if the city wishes some of the insurance companies now doing business in the city to continue to write their coverages.

At a meeting of the officials of the Springfield Board of Fire and Casualty Underwriters, it was decided that unless warnings of the fire department to reduce the fire hazards were compiled with, policies covering property in the city will be cancelled. Once the policies have been cancelled or have run out, no new policies will be issued. It is feared that other insurance companies will take the same step.

The fire prevention bureau under the direction of C. P. Lawrence, has been powerless to enforce their regulations. The procedure at the present is for an inspection to be made. If hazards are found, a notice is sent to the owner, and a second inspection is made. If conditions are not corrected, a second notice is sent. The power of the city ends with the second warning. In the future, the case will be turned over to the Board of Fire and Casualty Underwriters, and unless conditions are altered, the policy on the building will be cancelled.

An important step to remedy conditions was made by the city when they awarded a contract for placing all the electric wiring in the basements and attics of thirteen schools in the city in conduits to conform with the National electrical code.

Canada Has Heaviest Fire Losses—It is reported that Canada leads the world in the matter of fire losses and that eighty-five per cent of the fire losses in that country are preventable. For the past year, the losses were $50,000,000, and the delegates to the Canadian Credit Men's Trust Association were told that energetic measures must be taken for a reduction of the losses.

The Perfect Satisfaction and economy of wearing the

"FAMOUS KALAMAZOO"

Firemen's Uniforms has been proven by thousands of firemen. Catalog F501 will tell you all about them.

The HENDERSON-AMES CO.
KALAMAZOO, MICH.

Novo Acid Jars & Holders

of every description, stronger than lead and none-corrosive. Used by departments throughout the country.

Chemical Tanks and Lally Quick Opening and Self-packing Top for Chemical Tanks

Lally Improved Fire Hose Couplings, Fire Extinguishers and Charges, Fire Hose and Fire Department Supplies in General

Send for Complete Catalog

LALLY FIRE APPLIANCE CO.
Wilmington Brass Co., Wilmington, Del.

JACOB REED'S SONS

Founded 1824 by Jacob Reed

FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

Write for catalog and prices.

1424-1426 Chestnut St., Philadelphia, Pa.

In a HENDERSON Uniform

you always get correct tailoring, dependable quality, reliable workmanship, at the lowest prices consistent with values.

Catalogue illustrating the popular Styles of Firemen's Service Parade Uniforms or for prize contests, as well as Shirts, Belts, Hats, Caps, Badges, Banners, &c., mailed on request.

Write giving Number of Outfits desired and color Cloth preferred.

HENDERSON & CO.
11th & Race Sts., Philadelphia, Pa.

Cloth Uniform Caps for Firemen

Made of high quality blue uniform cloth, guaranteed not to fade. Cut on the New York Fire Dept. regulation pattern. Price $2.25, Postage extra. Other grades, $1.75 and up.

GEORGE BRUNSSEN COMPANY
151 Greene St., New York

Waterous Dependable

ROTARY PUMPS FIRE HYDRANTS

Agencies in Principal Cities

Send for our Complete Catalog

WATEROUS FIRE ENGINE WORKS
INCORPORATED
St. Paul, Minnesota

The "Corey" Fire Hydrant of the improved Rensselaer type is the easiest to operate of any on the market.

Ask for prices and details

FILL IN AND MAIL TO

RENSSELAER VALVE CO., Troy, N. Y.
Send me Hydrant Book, No. 9.

Name .....

Street ..... City .....

EDDY Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents

New Victor Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

Over 5,000 Victor Gas Masks in Service

Full Line Fire Dept. Supplies and Equipment.

New 43 Edition Catalog on Request

The Woodhouse Mfg. Co., Inc

35 Warren St., New York

D. A. Woodhouse, Pres. and Gen. Mgr. — George J. Kuss, Vice-Pres. and Treas.

Compressed Air Fire Whistles, Fire Alarm Boxes, Gongs, Etc.

Complete Systems Installed

Estimates Cheerfully Given

LOPER FIRE ALARM COMPANY

Stonington, Conn.

Fire Fighting Appliances

We specialize in Fire Ladders, Pike Poles, Door Openers and Lock Breakers, Battering Rams, Life Belts, Cellar Pipes, Hose Hoists, Wrenches, Fire Axes and Wall Picks.

Combination Ladder Co., Inc.

381 Fountain Street — Providence, R. I.

Quick-Acting Reliable

Anderson-Hale Improved

FIRE STATION DOOR OPENERS

Over 1,300 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening. Opens from driver's seat or from floor. Many repeat orders from users.

Write for complete information.

The Anderson Coupling & Fire Supply Co.

Mfrs. Motor Fire Equipment and Fire Supplies

Kansas City, Kansas

The Schavoir Gas Mask

The latest and most advanced development in gas masks. Fire officials everywhere should get the facts.

Write for Complete Information

Schavoir Rubber Co. Stamford, Conn.

JOHN H. CLAY, INC.

1320 Ridge Ave., Philadelphia, Pa.

Established 1864

Manufacturer Fire Dept. Supplies: Automatic Door Spring Outfits and All Kinds of Hydrant Connections.

The "Fyr-Foe" Twin Pumper

for Fords

The "Fyr-Foe Auto-Powered" Pumper makes use of the 15 brake horse-power in a Ford car or truck at a price within range of the smallest communities, providing adequate fire protection at a fraction of the cost of big apparatus.

Send for complete details.

Jaeger Portable Power Corp.

Woodbridge at Rivard St., Detroit, Mich.

CLIFTON SALVAGE COVERS

have all the good points.

- *The most convenient size—12 x 18 feet*
- *The right weight—About 38 pounds*
- *Strong, heavy duck and lapped seams*
- *An absolutely waterproof double coating of a high grade, long life, rubber compound*

Many large Protective Departments use them

Send for our circular

CLIFTON MFG. CO.

Jamaica Plant District — Boston, Mass.

All Subscribers are Invited to Use This Page Regularly

Whenever you are in the market for new equipment you naturally want to get complete information from all reliable manufacturers before you place the orders for your department.

This page is a feature of every issue to make it convenient for you to get all this information without cost to you and without placing you under any obligation whatever to buy from any particular manufacturer.

You only have to run down the list of equipment and mail in the coupon below with your name and address and the numbers that indicate what you are interested in and we will then have the leading manufacturers of this equipment send you complete information direct—so why not let us help you get what you want? We are glad to be of service. Help yourself.

Here's Your List of Fire Protection Equipment and Supplies

1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal.
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Cable & Wire, Fire Alarm.
23 Caps, Firemens.
24 Chains, Non-Skid, Fire Apparatus.
25 Chassis for Fire Apparatus.
26 Chemical Engines and Tanks.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers, Fire, Powder.
38 Fire Boat Nozzle Equipment.
39 Fire Department Supplies, General.
40 Fire Drills & Organizations.
41 Fire Exit Devices, Door Opening.
42 Fire Alarm Posts.
43 Fire Escapes, Portable.
44 Fire Escapes, Rigid.
45 First Aid Equipment.
46 Flare Lights.
47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.
55 Hose Clamps.
56 Hose, Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
68 Nets, Life.
69 Nozzles, Pipes & Misc. Brass Goods.
70 Packings, Pump.
71 Pads, Pole Hole.
72 Paints, Fire Resisting.
73 Priming Ether, Motor.
74 Pumping Cars, Standard.
75 Pumping Cars, Foam.
76 Pumps, Fire Apparatus.
77 Pumps, Fire Service, Stationary.
78 Pumps, Portable, for Fire Protection.
79 Record Books, Fire.
80 Relief Valves.
81 Reviving Apparatus, Oxygen.
82 Rubber Clothing.
83 Searchlights.
84 Shingles, Fire Retardant.
85 Shirts, Firemen's Special.
86 Sirens, Apparatus & Chiefs Cars.
87 Sliding Poles.
88 Soda & Acid Chemicals.
89 Spark Plugs, Fire Apparatus & Motor cycles.
90 Squad and other Auxiliary Cars.
91 Sprinkler Head Shut-Offs.
92 Sprinkler Supervisory Service.
93 Sprinkler Systems, Automatic, Foam.
94 Sprinkler Systems, Automatic Water.
95 Starters, Fire Apparatus, Automatic, Air.
96 Steam Fire Engines.
97 Tarpaulins & Fire Blankets.
98 Tetrachloride Chemicals.
99 Thawing Equipment, Hydrant.
100 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
101 Tractors.
102 Traffic Clearing, Systems.
103 Triple Combination Pumping Cars.
104 Uniforms.
105 Water Towers.
106 Wheels, Cushion.
107 Whistles, Fire Alarm, Compressed Air
108 Whistles, Fire Alarm, Steam.
109 Whistles, Fire Apparatus.
110 Wrecking Trucks.

TEAR OFF HERE

FIRE ENGINEERING

225 West 34th St., New York City.

As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Date.....

Name .....

Position .....

Street .....

City and State.....

Nos. .....

Nos. .....

Nos. .....

For Information on Any Equipment Not Listed Above, Write on This Page or Use Separate Sheet

August 10, 1926

UNIFORMS

Made for FIREMEN, POLICEMEN, BANDSMEN, LETTER CARRIERS, CHAUFFEURS, TAXI or BUS DRIVERS, RAILROADMEN, WAR VETERANS, etc.

CARRIED IN STOCK, IMMEDIATE DELIVERY — or cut and tailored to-measure.

Write for samples and prices.

For Sale by Clothiers.

FRED M. BATCHELDER CO.

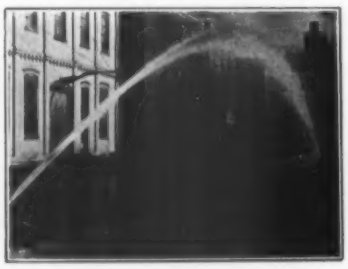
Manufacturers & Wholesalers,

120 Harrison Ave., Boston, Mass.

This Signal two-collar shirt is now regulation style among fire fighters in many large American cities. Let us send samples.

Signal Shirt Company
Racine, Wisconsin

Signal



Eastman

Nozzles and Deluge Sets

Are Designed by Engineers

who for over thirty years have specialized in equipment for producing superior fire-fighting streams in all sizes unsurpassed for solidarity, distance and effectiveness, and safely handled under all pressures.

Write for Catalog

Samuel Eastman Company
Concord, N. H.

A Nation-Wide Service for Better Protection Against Fire Loss and Water Damage

PROTECTION A.D.T. SERVICES

The remarkably efficient A. D. T. System of Central Station Night Watch and Fire Alarm Service has played a large part in helping to cut down the fire loss of the country; and the A. D. T. System of Sprinkler Supervisory Service has been instrumental in saving millions of dollars in water damage.

An Invaluable Service

It is generally known that water damage in sprinklered premises is considerably greater than fire damage, and it is a fact that in a great majority of sprinklered equipments no one on the premises knows how to shut off the water. Hence, the great importance and value of our Supervisory Service in not only recording water flows, but immediately sending representatives who know how to stop them.

Over $20,000,000,000

worth of property throughout the country is protected by A. D. T. services, and fire officials in cities everywhere are finding A. D. T. cooperation an invaluable aid in their work.

Send for Complete Information!

Controlled Companies

American District Telegraph Co.
Executive Offices, 183 Varick St.
New York City

ADVERTISING INDEX

Advertising Pays—in Fire Engineering

	PAGE
Ahrens-Fox Fire Engine No.	761
American District Telegraph Co.	804
American-LaFrance Fire Engine Co.	790
Anderson Coupling & Fire Supply Co.	802
B. & M. Mfg. Co.	793
Batchelder Co., Fred M.	804
Bi-Lateral Fire Hose Co.	797
Braxmar Co., C. G.	797
Brunssen Co., Geo.	801
Buckeye Iron & Brass Works	793
Buffalo Fire Appliance Corp.	789
C. A. M. Mfg. Co.	790
Clay, Inc., John H.	802
Clifton Mfg. Co.	802
Combination Ladder Co.	802
Darling Valve & Mfg. Co.	763
Decot Machine Works	798
Eastman Co., Samuel	804
Eddy Valve Co.	801
Erick Electric Siren Co.	798
Eureka Fire Hose Mfg. Co.	*Front Cover*
Everson-Ross Co.	794
Fabric Fire Hose Co.	765
Foamite-Childs Corp.	798
Gamewell Co.	766
Garl Signal Co.	762
General Motors Truck Co.	759
Goodrich Rubber Co., B. F.	*Inside Front Cover*
Gibbs-Wahlert Mask Co.	797
Hahn Motor Truck Co.	798
Hale Fire Pump Co.	797
Harrington-Seaberg Corp.	793

	PAGE
Henderson-Ames Co.	801
Henderson & Co.	801
Information for Buyers	**803**
International Harvester Co.	*Inside Back Cover*
Jaeger Portable Power Co.	802
Kelly-Springfield Tire Co.	*Back Cover*
Kenosha Fire Engine & Truck Co.	798
Lally Fire Appliance Co.	801
Larkin Mfg. Co.	797
Loper Fire Alarm Co.	802
Maxim Motor Co.	798
Mine Safety Appliance Co.	793
Morse & Son, Inc., Andrew J.	797
Northern Fire Apparatus Co.	764
Pirsch & Sons Co., Peter	798
Reed's Sons, Jacob	801
Rensselaer Valve Co.	801
Sanford Motor Truck Co.	798
Seagrave Corp.	785
Schavoir Rubber Co.	802
Selden Truck Corp.	794
Signal Shirt Co.	804
Siracode Signal Corp.	786
Sterling Siren Fire Alarm Co.	786
Stoughton Wagon Co.	797
Union Water Meter Co.	794
Waterous Fire Engine Works	801
Waukesha Motor Co.	797
Wilmington Brass Co.	801
Wood & Co., R. D.	794
Woodhouse Mfg. Co.	802
Yellow Truck and Coach Mfg. Co.	759

Better Take It Off!

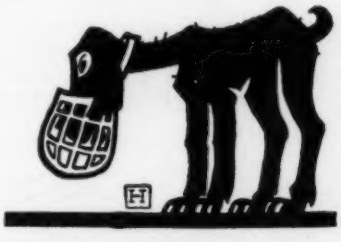
Don't keep the poor hound muzzled up. How can he stay in touch with the boys and learn anything about the fire fighting profession if you keep him away from FIRE ENGINEERING?

Get him a license (in the form of a year's subscription to FIRE ENGINEERING), only $3 for 24 wonderful issues! Just mail this blank to FIRE ENGINEERING, 225 West 34th St., N. Y. C., and we'll start you with the current issue. Bill within 30 days. O.K.?

Your Name .....

Position .....

Address .....



The Poor Fellow will be lots happier with a License—Only $3.00 a year for 24 issues!

You Should Have Them!

These two new books contain a mighty fine lot of up-to-the-minute information for every fire officer. Just glance through the list of topics covered as shown below — Then get your order in while the editions last.

Questions and Answers for Battalion and Deputy Chief

(210 pages, fully illustrated)

By Geo. J. Kuss,
Former Deputy Chief N. Y. F. D., and

Fred. Shepperd, B. Sc., M. E.,
Managing Editor, FIRE ENGINEERING

Price $2.00; Postpaid $2.15.

CONTENTS:

Detailed description of the proper procedure in fighting fires: 1. Size-up; 2. Calling of help; 3. Saving of life; 4. Covering exposures; 5. Extinguishing fire; 6. Overhauling.

Fires of large size: How the following types of fires should be fought:
Joisted brick buildings;
Large department stores;
Large hotels and rooming houses;
Warehouses on waterfronts;
Large area residential fires;
Trains of gasoline tank cars;
Combination stores and apartments;
Large oil works;
Motion picture film exchanges;
Large refrigeration plants;
Fiber and rag warehouses;
Tall office buildings;
Piano factories;
Armory (during merchandise exhibitions);
Large area celluloid merchandise factory;
Seashore resort conflagrations;
Large area "taxpayers;"
Wholesale grocery stores and warehouses;
Group-building fires;
Theatres, schools, shoe and candy factories.

Inspection work: what it should cover, and how to supervise it.

Fire Hazards: a list of the more prominent hazards and how they may be corrected.

Overhauling: what it includes and how it is supervised.

Reports of Chief Officers: how to prepare.

How to test motor fire apparatus.

Back draughts: what they are and how to prevent them.

Etc., etc., etc.

Questions and Answers for Lieutenant and Captain

(290 pages, fully illustrated)

By Geo. J. Kuss,
Former Deputy Chief N. Y. F. D., and

Fred. Shepperd, B. Sc., M. E.,
Managing Editor, FIRE ENGINEERING

Price $2.50; Postpaid $2.65.

CONTENTS:

Fires: How the following types of fire should be fought: Celluloid; ammonia refrigerating plants; public schools; old style tenements; private houses; lumber yards; loft buildings; stables; oil refineries; varnish works; new tenements; quicklime plants; cotton warehouses; cold storage plants; clothing factories; churches; rubber cement works; printing plants; steamships; theatres; motion picture studios; restaurants; frame tenements; wood working factories; department stores; garages; hay sheds; 5 and 10-cent stores; grocery stores; lodging houses; acid and chemical storehouses; pitch and turpentine warehouses; vegetable oil storehouses; fire-resistant office buildings; carpet mills; wooden piers; graneries; rag warehouses, etc.

Protecting private property at fires.

Ventilation, what it does; how it should be performed.

What to do in a theatre fire emergency.

How to maintain discipline.

Inspections, how to make them.

Duties of fire officers.

Evolutions and drills.

Use of apparatus.

Use of appliances.

First aid at fires.

Dangerous chemicals.

How to handle chemical fires.

Rules and regulations.

How to write reports, and fire department communications.

"False and True" questions and answers.

How to answer examinations.

Etc., etc., etc.

Use This Coupon to Order Your Copies

Book Department,
FIRE ENGINEERING
225 W. 34th St., N. Y. C.

Please send me ..... copies of Questions and Answers for Battalion and Deputy Chiefs, ... copies of Questions and Answers for Lieutenants and Captains, for which I enclose a money order for $.....

Name.....Address.....

Rank..... Date.....

International Harvester Equipment

Trucks — Coaches — Tractors

INTERNATIONAL HARVESTER offers municipalities an unmatched line of automotive equipment. Each model and each type of equipment has grown out of nearly a quarter of a century of catering to the commercial motor vehicle requirements of America.

Heavy-Duty Trucks: These popular models are making history among some of the country's most important truck users. Various municipal departments in New York City, Atlanta, Georgia, Washington, D. C., Los Angeles, California, Paducah, Kentucky, Hannibal, Missouri and other cities are relying on International Trucks of from 1½-ton to 5-ton maximum capacities for their heavy-duty work.

Speed Trucks: The list of International Speed Truck owners is equally impressive. Wherever fire-fighting equipment and other lighter loads must be hauled quickly these economical trucks are found in great numbers. Capacities include a ¾-ton Special Delivery, 1-ton Speed Truck, 1½-ton low-chassis SL, and 1½-ton short-wheel base SD.

Motor Coaches: We are in position to recommend and supply the proper coach for every passenger transportation need. A wide range of chassis and bodies to choose from.

McCormick-Deering Industrial Tractors: The City of New York and the California State Highway Department are among the prominent users of McCormick-Deerings, the California fleet numbering nearly a hundred. These compact, full-powered units are available with wheel and tire equipment for all classes of industrial and municipal work. Ideal for use with trailers, and semi-trailers, and road machinery.

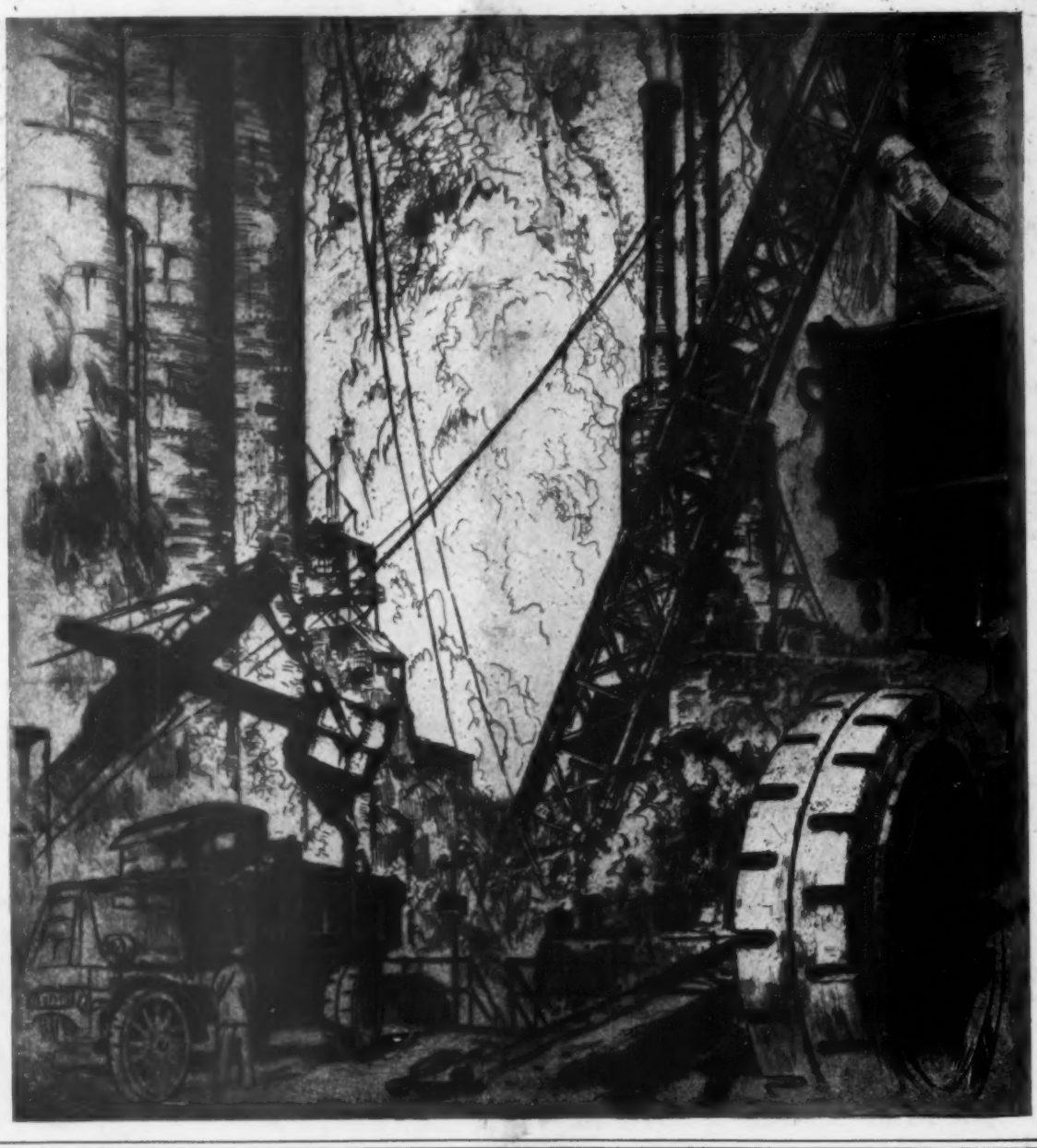
120 Company-Owned Branch Houses: The largest company-owned truck service organization in the world is at the call of International Truck and McCormick-Deering Tractor owners.

If in need of fire equipment or other transportation units, take a tip from the thousands of International owners. Ask us for complete information on any or all models.

INTERNATIONAL HARVESTER COMPANY OF AMERICA

(INCORPORATED)

606 SO. MICHIGAN AVE. CHICAGO, ILL.



Etching made for the Kelly-Springfield Tire Company, by O. Kuhler, Pittsburgh

WHEREVER heavy burdens are to be carried, or unusually trying road conditions encountered, truck owners can depend upon Kelly Kats—the original notched-tread truck tires—to solve their tire problems. The reason is simply that no other type of tire offers the same combination of traction, resiliency and mileage.

KELLY-SPRINGFIELD TIRES

FIRE ENGINEERING, AUGUST 10, 1926
PRINTED BY THE WILLIAMS PRESS, ALBANY, N. Y.